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A.D.A. Annual Meeting, Chicago, October 25–27

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THE FUTURE OF THE DIETITIAN[1]

GLADYS E. HALL, M.S.

Executive Secretary, American Dietetic Association

IN ORDER to prophesy with some intelligence, an examination or review of past events as they are linked with the present must be the main guide.

With a sense of real pride in professional achievements, we may point to our Association which has now passed the six thousand mark in membership. It is significant that the membership steadily continues to increase, a 10 per cent increase having been maintained for some time. At present there are 258 membership applications pending.

In a world at war we expect many changes—changes which affect and influence each one of us intimately. But I wonder if we realize the great amount of relocation that has already occurred among us. Some of the shifting of members we might term "dislocation" rather than relocation, for the present, now that so many members of the Association are serving in far-flung corners of the world. The force of this shift in our dietetic population is apparent when we realize that 3500 changes of address have been recorded since September 1, 1943, an 8-month period.

RELOCATION OF DIETITIANS UNDER PRESENT CONDITIONS

Our records are not up to date at any one moment, but a recent check indicated that at least one out of every 6 members of the Association is an Army dietitian or in some branch of the United States services. (This includes dietitians in veterans' hospitals.) At least two thirds of the members are hospital dietitians. It is conservative to say that one out of every 4 members who were in civilian hospitals is now a dietitian in the Medical Department of the Army. (Some in the Army are not as yet members of the Association.) Is it any wonder that civilian hospitals are in urgent need of dietitians? The figures quoted include Army dietitians overseas, but do not include those who are serving overseas or expect to serve overseas with the American Red Cross or under other auspices.

TABLE 1

	NO.	%
Positions open	452	
Hospital	387	86
School Food Service (includes some teaching)	28	6
Public Health	9	2
Commercial	8	2
Miscellaneous	7	1.5
Camp and Summer Relief	6	1.5
Industrial Cafeteria and Industrial Feeding Specialists	5	1
Teaching	2	
Number of registrants	197	
Active registrants	106	
Unemployed (no experience)	19	
Unemployed (experienced)	11	
Requesting specific location	17	
Employed, experienced	40	
Employed, experienced (requesting unusually good position only)	19	
Inactive registrants	91	

While on the subject of dislocation, we must not overlook the very important fact that many dietitians who had retired or who have been homemakers are again rendering their services as hospital dietitians and in many other capacities. Some of these have joined the Association or have been reinstated; others have applied but are not as yet eligible for membership. This group, too, represents a temporary dislocation. All these dietitians deserve credit for the fine work they are doing.

We might classify in the relocation group some of the dietitians who are serving with government agencies, for many are employed in such capacities. Still others have become relocated as dietitians in industrial feeding positions. At least 2 per cent of the membership, possibly more, have gone into this field. With increased interest in public health, more and more of our members are now employed in state, county, and city health departments and social agencies.

An analysis of our Placement Bureau records on May 9, 1944 (Table 1) serves to illustrate the demand for dietitians in various capacities.

SHIFTS IN SUPPLY AND DEMAND

Striking evidence of a change in supply and demand is seen when one notes the steadily increasing number of openings and the diminishing number of registrants in the last 10 years, as shown in Table 2.

TABLE 2

DATE	NO. OPENINGS	NO. REGISTRANTS
May 1944	452	197
May 1943	402	220
May 1942	193	298
May 1941	134	251
May 1940	104	315
May 1939	60	285
May 1938	53	278
May 1937	55	276
May 1936	21	294
May 1935	11	292
May 1934	7	368

TABLE 3

YEAR	NO. APPROVED COURSES	NO. GRADUATING FROM APPROVED COURSES
1934	54	383
1935	52	383
1936	53	393
1937	57	433
1938	56	457
1939	60	501
1940	59	511
1941	60	571
1942	63	650
1943–44	70 (plus new courses)	900

Note should be made of the fact that only 19 inexperienced dietitians are now registered in the Placement Bureau. These are recent graduates of approved training courses. Each day brings a few more registrants to this group, and it is anticipated that a considerable number will be available during the summer months. Directors of approved courses are being asked to urge their students not only to apply for membership in the Association, but also to register with the Placement Bureau before they complete training. In view of the fact that at least 900 students will graduate from approved courses in 1944, a higher percentage of registration in the Placement Bureau would be expected. It is encouraging to note that many

[1] Presented at a Luncheon Conference sponsored by the Illinois, Indiana, and Wisconsin Dietetic Associations at a meeting of the Tri-State Hospital Assembly, Chicago, May 11, 1944.

of these students become Army dietitians (the estimate is about one third). Many of the remaining inexperienced dietitians obtain positions without assistance from our Placement Bureau or any other agency.

Further striking evidence of growth in the past 10 years is shown in Table 3. Although the number of students graduating from approved courses today is about threefold the number graduating 10 years ago, we still do not fulfill the needs. There are 8 new hospital courses definitely under way, one Army course, one Veterans Administration course, as well as one state hospital course. There is also a new administrative course with industrial emphasis, and possibly another being organized at present. This may bolster the yearly total of student dietitians to 1000.

RECRUITING DIETITIANS

Where do we obtain that number of students, you may well ask. A survey of nonmilitary enrollments, made in October 1943 and reported recently in *Education for Victory*,[2] shows a 12 per cent increase in enrollment over 1942 in home economics courses. The enrollment is up in all classes, from freshmen to seniors. This is an encouraging sign. However, recruitment for the dietetic field by our own members is needed more than ever. It was with that need in mind that the vocational leaflet, "Dietitians Are Urgently Needed," was prepared. In addition, the brochure, "Dietetics as a Profession," is to appear with a new cover, revised content, and appropriate illustrations. It is important that we reach students in college, but it is even more important that high school students be made aware of our profession. The following state dietetic associations have each distributed a thousand or more copies of the vocational leaflet: Ohio, Kansas, North Carolina, Missouri, and Oklahoma. A total of over 9000 copies has been distributed by state associations, and a grand total of 12,000.

There are other appropriate and effective means of recruiting dietitians. We may learn a lesson from the Army by observing their methods in this respect, for the Signal Corps knows the type of pictorial presentation, etc. that has the greatest appeal and human interest.

One state association has tentative plans to make a movie depicting the activities of student dietitians. Approved course directors are preparing more and more attractive brochures giving factual information, as well as portraying by photographs the work of the dietitian.

OPPORTUNITIES FOR EXPANSION OF ACTIVITIES

It would be folly to claim that during the present emergency our standards of food service have not suffered. They have been altered not only because of shortage of personnel, but also by adjustment necessitated by rationing and other regulations. Out of all this we are learning to use trained personnel as intelligently and economically as possible. Many dietitians are maintaining fundamental standards of quality food, yet are eliminating all extra steps and processes. Cafeterias, especially pay cafeterias for hospital employees, are more and more in evidence. The standardization of recipes and of size of portions is becoming a necessity. The regulation of time of delivery of fresh produce, meats, processed goods and almost every item used in the institution kitchen immediately necessitates more efficient marketing and purchasing. More efficient use of equipment, as well as more attention to upkeep and repair, is apparent. It is gratifying, too, to see more emphasis on sanitation. Some dietitians are cooperating in this respect with state public health departments. At least one approved course conducts a regular course for dietitians in applied sanitation. The scheduling of personnel is under better control, and we are turning to groups *outside* the hospital for counseling on personnel problems. The Training Within Industry program is especially applicable to the duties performed in a dietary department.

It seems reasonable to believe that these changes will herald unprecedented progress in the future.

The proposed revisions to the Constitution of our Association provide a firm foundation for building dietetics on a higher plane. Instead of one delegate from each of the 39 affiliated state associations, as under the present plan, there would be a potential total of 125 delegates under the proposed plan whereby a proper numerical ratio of delegates to members would be possible. The new system, too, would encourage the organization of affiliated state associations. In fact, with increased dues, one would automatically become a member of the state association of one's residence on paying A.D.A. dues. The Hawaii Dietetic Association has plans for affiliation. Recently a letter [*see* p. 410 this JOURNAL for June] arrived from 21 A.D.A. members who met in New Guinea. States as yet unaffiliated are Maine, Vermont, Mississippi, North Dakota, South Dakota, Arkansas, New Mexico, Idaho, Wyoming, and Nevada.

When the roll call sounds for state delegates, legislative action begins. With better representation, state and local associations will continue to gain in strength and prestige. There will be wider participation by members in Association activities, in which young dietitians will be called upon to do their part. In her presidential address last October, Frances MacKinnon spoke of our Association projects as intensive in nature. She looked forward to the time when they would become extensive. Just now the scope of our projects is being extended. The inclusion of a joint Conference of Medical Social Workers and Dietitians at this Tri-State Hospital Assembly is significant. It is interesting to recall that the session was actually the outgrowth of an A.D.A. project concerned with Emotions and Food Therapy, a joint study with the Committee on Food Habits, National Research Council. Another far-reaching project is the Professional Education Section's cooperative study with the National League of Nursing Education on instruction in nutrition for student nurses, and evaluation of results. Still another is the Administration Section's project—a training program for hospital dietary department employees. This last is for the purpose of developing manuals of instruction for the use of the dietitian in initiating a training program for nonprofessional employees in the hospital, such as waitresses, tray maids, and kitchen workers. *Care of Food Service Equipment*,[3] a book compiled last year by a committee of the Administration Section, and now available, is only the first of a series of administrative manuals.

In preparing for peace, it is our duty to see that the groundwork is laid for professional advancement. Postwar conversion problems and plans for relocation of dietitians should be studied now. The War Activities Council may soon have a study under way to determine the approximate number of dietitians needed after the war. Questionnaires addressed to hospital superintendents and others who hire dietitians might reveal hidden possibilities for the future employment of dietitians. Participation by members in each state in an effort to

[2] April 20, 1944 (Vol. 2, No. 20). A publication of the U. S. Office of Education available from the Superintendent of Documents, Washington 25.

[3] Care of Food Service Equipment. Minneapolis: Burgess Publishing Company, 1944.

obtain professional rating for dietitians in civil service positions is a worth-while pursuit of first importance. The employment of highly-qualified dietitians in state institutions is another problem which should be approached and studied in each state. In general, every dietitian should be aware of the legislation introduced in her own state. Further knowledge of economics and agriculture is needed by administrative dietitians in state hospitals. In a recent issue of this JOURNAL mention is made of the joint planning in a state department of welfare, in which a superintendent of a state hospital, a farm manager, and a dietitian participated. Further study of diet as related to mental patients and more attention to diet in relation to geriatrics are indicated for the dietitian in the state hospital, as well as in other institutions.

There are many untapped possibilities for employment in administrative fields. The dietitian who specializes in the planning of dietary department layout will surely have an enviable position in the postwar period. Without doubt there will be other fascinating jobs requiring the services of consultant dietitians. The dietitian who enjoys working with personnel and improving personnel policies should have a bright future, particularly if she takes advantage of the present opportunities of adopting T.W.I. methods in her department.

Other administrative pursuits in industry, in the school lunchroom field, and in nursery schools, await further development by dietitians. Consultation services of the therapeutic dietitian and nutritionist in the public health field are being sought right and left.

Opportunities in research and other educational pursuits will be available for the experienced dietitian. The scope of teaching responsibilities of the dietitian is increasing daily. Notable among these is the teaching of student nurses; there is an increasing tendency to employ at least one dietitian or even more for full-time teaching positions in the hospital. The assistance of the experienced teaching dietitian is being sought in medical schools and outpatient departments. The fact that 16 of the 70 approved courses offer some graduate credit to student dietitians and that 8 other courses expect soon to offer graduate credit is significant.

Our future depends largely upon us. Let us make each state association strong and thereby increase our effectiveness as a national organization. We must also consider our international outlook. The May issue of this JOURNAL points up the status of nutrition in our own Puerto Rico, in Mexico, in Chile and in other American republics. We have received inquiries about the possibility of students from abroad completing dietetic training in this country. A number of visiting physicians from South American countries have been our guests in hospitals during the past year. There is much that we can do to assist others in organizing training programs for dietitians. As you may know, we have sent information on approved courses to Hawaii and, as I have already remarked, the Territory of Hawaii may soon be represented among our affiliated dietetic associations. Within the past few weeks we have also sent information regarding approved courses to Australia and to England.

Once the word "dietitian" seldom appeared in print outside our own JOURNAL. Now it seems that the term dietitian is so familiar that it appears in simile; for example, *Time* quoted President Robert Sproul of the University of California as saying, in a discussion of the swinging over of higher education to the free elective system, "Faculties and particularly departments, without any control by competent educational dietitians, were encouraged to multiply the dishes on the steam-table of the educational cafeteria. No wonder the helpless victims suffered all manner of educational dyspepsia and malnutrition. . . ." Undoubtedly it is largely through our united efforts as an Association that the public has become familiar not only with the title dietitian, but with the scope and value of her work. All this in the end should react to the benefit of each individual member of the Association.

A Warning to the Career Woman

Young women all over the country are expecting to take a hand in the rehabilitation of Europe. Who holds out this prospect to them? Not the United Nations Relief and Rehabilitation Administration. Every official statement of that agency makes it clear that, in the first place, no large number of women will be used. It has been repeatedly stated that, aside from the clerical staff, the only women needed will be those with special training in social work, nutrition, child care and public health. And it has been made clear that training alone will not be enough. Experience will be necessary and experience on a wide scale. No young inexperienced women will be taken over under any circumstances, regardless of their training.

Women will do well to avoid those professions in which men are still pre-eminent. I am speaking of the average college woman, not of the notably brilliant one who must, because of a marked gift for law or engineering or surgery, move out of the ranks and take her chance with men. By and large, women will not be, any more than they have been in the past, the movers and shakers of the world beyond the horizon.

Women will have scope on a larger scale for their home-making talent. It seems likely that there will be a building program calling for women skilled in interior decoration, in the buying of furniture and fabrics, in landscape gardening. Women trained in institutional management and in dietetics will be in demand. In dietetics particularly there promises to be an increase in field work, in research and in teaching. It is probable that community needs will be more commonly met by community feeding, child centers, work among young people, public health and organized recreation—all in the hands of professionally trained workers.—*Margaret B. Pickel, in The New York Times Magazine, July 16, 1944.*

THE ROLE OF THE DIETITIAN IN A COLLEGE NUTRITION PROGRAM

CHARLOTTE M. YOUNG, Ph.D.[1]

Assistant Professor of Nutrition and Dietetics, School of Nutrition and New York State College of Home Economics at Cornell University

OPPORTUNITIES for dietitians with advanced training have been limited. True, the dietitian with an advanced degree has never been at a loss for a position, but too often the position does not offer suitable opportunities for her to apply her practical dietetic experience to the best advantage. Ohlson (1) made this point very clear in an article in this JOURNAL three years ago. She called attention to the fact that she had known of several young women with three to five years of successful experience in practical dietetics who had chosen to continue their education by taking a graduate course. When they had completed their studies no suitable positions were available in the hospital field which would offer even a reasonable return on their academic investments. She also called attention to the results of Gillam's 1940 survey (2) which showed that less than 11 per cent of the dietitians who furnished data for this study had completed requirements for advanced degrees. Ohlson raises the question: Why is the number so small and why do students with advanced academic training seek fields other than the hospital? She believed the answer to be partly economic, though there appeared to be an undercurrent of dissatisfaction with opportunities in the hospital for personal and professional growth.

Another factor which may explain why such a small percentage of dietitians hold advanced degrees, is the very limited number of opportunities for graduate work in which the dietitian can capitalize, financially and professionally, on her dietetic training. There have been relatively few situations in which she could use and advance this skill to support herself while pursuing advanced training. Also, in most instances in the past, no financial recognition has been given, in graduate appointments, to her additional training and experience.

Now, however, as never before, there is an expanding field for young women who, through sound hospital training and experience, have gained invaluable knowledge and ability in handling the problems of feeding both well and sick people. To the ever-increasing opportunities in public health work, in industrial feeding programs, in coordinated research in human nutrition, the dietitian brings an appreciation and a practicability which sheer academic training alone, in most instances, cannot give. Hospital training and experience develop a practical common sense approach to human feeding problems which academic work alone cannot do. To the observant dietitian, hospital experience offers innumerable illustrations of the all-important concept that food is the raw ingredient of human tissue, plus some knowledge of how to get the individual to eat this food. After a few years of such experience further graduate work will open new horizons and expand old ones for the dietitian.

It is with the above thoughts in mind that a description of the role of the dietitian in the nutrition program for students at Cornell University is presented. Here the dietitian has been given an opportunity to use her advanced training, and with personal satisfaction. In the development of the program an opportunity has also arisen for the young dietitian to capitalize on her dietary training while acquiring additional educational background. An account of the formation, realization, and development of the program may offer encouragement to other dietitians who want the stimulation of further academic training, yet are loath to forego the irresistible attraction of practical dietetic problems.

[1] Dr. Young is a graduate of an approved training course for dietitians at Indiana University Medical Center.

ESTABLISHING THE PROGRAM

After the institution of the School of Nutrition at Cornell University, the first full-time professional person appointed specifically for School of Nutrition work was a dietitian (the author of this paper).[2] The dietitian was to implement a nutrition program for students under the combined sponsorship of the School of Nutrition, the New York State College of Home Economics, and the Department of Clinical and Preventive Medicine. Such a cooperative sponsorship is ideal and leads to an all-campus scope of usefulness and opportunities which would not be so readily possible under any one unit alone. Academic appointment was made in the School of Nutrition with rank and salary, and in the College of Home Economics (where the dietitian as a home economist logically belongs) with rank but without salary. In addition, the College of Home Economics has contributed office space, staff privileges, and many of the physical facilities necessary to carry out the projects undertaken. The Department of Clinical and Preventive Medicine has been exceedingly generous in the medical cooperation given and in their acceptance of the dietitian as an integral part of the clinical staff, with all the privileges and opportunities of such a staff member. Without the interested and active cooperation of all these groups, the success of the projects undertaken would not have been possible.

NUTRITION COUNSELING SERVICE

The nutrition program has been in the process of development for the past two years. The first portion of the program to be established was a nutrition counseling service for students as an integral part of the Medical Clinic. All students are referred to the dietitian by the medical staff, with whom all work is coordinated. As a member of the clinic staff, the dietitian keeps regular office hours in the clinic three afternoons a week, at which time students are seen by appointment. All appointments and contacts are made at the clinic. Initial appointments are scheduled at half-hour intervals. Pertinent medical history and recommendations are studied, and a careful diet history is taken. Advice is then given, based on the doctor's recommendations and the particular eating habits of the student. No mimeographed sheets are used, but individual plans suitable to the immediate situation are drawn up during the conference. If the problem is one which necessitates further help and encouragement of the student, the dietitian, at her discretion, makes subsequent shorter appointments at weekly, biweekly, or other suitable intervals.

The Medical Department is the logical place for the nutrition counseling service, and a suitably trained dietitian the logical person to do the counseling. Nutrition counseling in the health service identifies nutrition in its proper role as an integral part of the much larger picture of total health. The necessary related data are found in the clinic. Furthermore, the dietitian can strengthen the staff by interpreting recommendations for improving the nutritional status and helping students to carry

[2] Expenses for this work were defrayed by special grants to the School of Nutrition from Corn Products Refining Co., the Commercial Solvents Corp., and the Consolidated Edison Co. of New York, Inc.

through. Nutrition instruction, to be functional, requires a workable knowledge on the part of the counselor, plus a great deal of interest, time, and patience. Counseling with college students is a slow, time-consuming, individual task; however, the effort is compensated for by the fact that students have the means and opportunity to carry out the instructions given, so that it is possible, as it were, to make the best even better.

The problems that have been referred to the dietitian in the Medical Clinic are many and of various kinds. Weight gain or loss; therapeutic diets such as those used in allergies, colitis, diabetes, ulcer; requests for help in planning low-cost, easily prepared meals; and investigation and correction of faulty food habits are but a few of many. In less than two academic years about 250 individuals have been counseled; some 600 return visits have been made. Due to the reduction in the number of civilian male students, nearly three times as many women as men have been counseled. Since in many college situations men are subject to less favorable eating conditions than women, one can see the potentialities for the counseling service when the ratio of male to female students returns to normal. Recently a number of service men and women stationed on the campus have been referred to the dietitian for help.

Contacts were originally made with students as they came to the medical staff for other purposes. Soon the physical education staff, Office of Counselor of Students, instructing staff, and former patients were sending students to the clinic for help with nutrition problems. In all cases the students have the benefit of the attention of both physician and dietitian.

Recently, a new phase of the program has been instituted. The dietitian has joined the examining group at physical examinations required of all entering students. At that time appointments are made immediately with all students showing evidence of remediable nutrition problems. The instigation of this practice has greatly extended the contact with students and is in the nature of a preventive as well as therapeutic measure. For example, it has been observed that women students who are slightly overweight at the time of entrance tend to gain 10 to 20 lb. more in the first few months of college. Immediate attention to this tendency toward obesity and recognition of the problem serve to prevent such a gain. Furthermore, since the student is faced with her problem upon entrance to college she has an opportunity to do something about it early in her college career and thus can make better and happier adjustments in many instances and avoid the frantic, tragic attempts often made at the end of the college course in order to be considered for professional placement. Such a counseling program might well be more generally available to student nurses and employees in hospitals.

It is gratifying to see the interest, both personal and professional, expressed by the medical staff, in the progress made by students under the dietitian's care. But far more important, and exceedingly satisfying to the dietitian, is the realization that she has helped a student to make a more complete and satisfactory adjustment to college life. Of course there are some failures, but the great majority of the students, as well as their parents, appreciate the assistance given. The spontaneous enthusiasm of the students and their progress more than compensate for the disappointment now and then experienced with those who cannot be helped to help themselves.

SPECIAL DIET TABLE

The second portion of the Cornell University program, a Special Diet Table, grew in response to many needs. It affords a means of providing special diet service which ordinarily cannot be handled satisfactorily through the usual campus food services; it offers tangible assurance to parents that students with difficult dietary problems will receive attention; it offers an excellent opportunity to accustom the student to a new diet as well as to good food habits in general; it provides welcome security to the student as a group member, which in itself can be of real therapeutic value.

The dietitian was asked to establish such a table and did so, under wartime conditions, with the generous cooperation of the three sponsoring units. The School of Nutrition advances the operating funds; since the infirmary is located off campus, the College of Home Economics contributes the housing and much of the working equipment and facilities; the Department of Clinical and Preventive Medicine cooperates with regard to medical advice and support, and passes upon those who are to be admitted to the Special Diet Table group. The number of those who can be helped through this service is limited by the capacity of the table. There is always a waiting list, and thus acceptance at the table becomes a privilege. That which is a privilege leads to cooperation, which helps make possible the excellent results obtained. Even to an experienced dietitian, the changes in human beings which can be effected through good feeding of cooperative subjects are breath-taking. A splendid spirit is evident among the group and a feeling of comradeship and enjoyment. Results have been gratifying not only because of the physical benefits attained, but also because of the personal satisfaction, pride, and the expressed appreciation of the students. It is well worth the effort to make such an opportunity possible and eventually it is hoped that facilities will permit such service for every student who needs it and is willing to cooperate. To date about fifty students have been cared for; some for short periods until adjustment had been made to the new regime; others, with more complicated problems, for a year or two-year period.

It was in connection with the Special Diet Table that the opportunity arose for graduate training for a dietitian. When the diet table was first organized and established, the dietitian in charge faced a challenging problem because of the food, labor, and equipment difficulties incidental to 1942–43. At the beginning of the second year it was decided that a half-time graduate assistantship at $1,200 a year should be given to a junior dietitian who would be responsible for the Special Diet Table under the general supervision of the senior dietitian, and be able to devote sufficient time to graduate study toward the M.S. degree. This assistantship is a practical form of encouragement for suitable young dietitians who wish to expand their theoretical knowledge of nutrition while capitalizing on their dietary training and at the same time enlarging and broadening both academic and professional experience. The appointment has just been capably filled for a second year. It is our hope that the plan may continue indefinitely and serve as a practical stimulus to the further training of capable young women after they have had some working experience. The generous list of interested applicants in this period, when candidates for graduate assistantships are few and dietetic and nutrition positions available on every hand, is indeed gratifying. Such a response may also be interpreted as a strong indication that dietitians are really interested in

graduate training, especially when appointments suitable both from the standpoint of salary and type of work are made available to them. It is to be hoped that other similar opportunities may present themselves.

DIETARY STUDIES AND OTHER ACTIVITIES

The next phase of the program was an outgrowth of the Nutrition Counseling Service and the Special Diet Table. Prerequisite to effective counseling and choice of students to be given the privilege of joining the Special Diet Table group, is a thorough knowledge of existing food facilities and opportunities available to students, as well as a knowledge and understanding of student eating habits. All this the dietitian could acquire in several ways, namely: by means of routinely noting the menus of the university-supervised eating establishments; carefully observing the existing facilities; and studying the food habits of students. The desire for more information on the last-mentioned point, to be used in counseling and classroom instruction, inspired a dietary study. A fairly accurate picture of actual campus food and eating habits, about which information is usually vague and subject to much rumor, is of immeasurable value in helping counselors and medical staff to know how much credence may be given to student notions concerning food. Such a survey also points out remediable difficulties and often reassures the school administration. All too often college dietary studies have been limited to students in home economics classes who are unconsciously biased by student-teacher relationships or the knowledge of what one is "supposed to eat." The dietitian attached to the Medical Clinic is in a unique position to obtain accurate and unbiased information. A study covering all eating situations, and undertaken quite independently of classroom work, coupled with careful observation and reference to official menus, gives a fairly accurate picture of the true campus food situation and student eating habits.

The ultimate objective of an effective nutrition program for students should be to reach all students, regardless of college affiliation. The number who can be reached by personal counseling, of necessity, is limited; also, personal counseling probably reaches only those with the more obvious problems. To extend a knowledge of the elements of good personal and family nutrition to a larger number of students, a two-credit-hour course in elementary nutrition was established in the College of Home Economics but limited to non-home economics students. The dietitian, who is interested in all campus student nutrition problems and is also a member of the College of Home Economics staff, is the logical person to teach such a course. Illustrations gathered from the clinic, diet table, and dietary studies serve unusually well as teaching tools for this class.

Besides their more formal activities, both the dietitian and her graduate assistant have been drawn, in response to requests, into more informal extracurricular activities which reach still more students and university personnel. Requests have come from many sources for participation of the dietitian in programs of other university departments: lectures on "Nutrition and Personal Appearance" for home economics orientation classes; assistance in student-organized Red Cross Nutrition and Dietitian's Aide courses; talks to weight-control classes in physical education; and, at the request of the Counselor of Students, a series of meetings for sorority chaperons.

Last, but by no means least, is the place of the dietitian with suitable advanced training in coordinated programs of research in human nutrition. If the dietitian stands ready to cooperate, and if she has developed through her other activities an appreciation on the part of the medical and other scientific staffs of what she has to offer, she will be asked to bring her experience in feeding human beings to bear upon nutrition research problems. There is an ever-increasing need, in connection with the war effort, for research work on problems in human nutrition. These problems call for the best cooperative talents of the physiologist, chemist, physician, and dietitian. Such a cooperative project has been the most recent development in the dietitian's work at Cornell University, out of which has arisen an additional full-time position for a research dietitian.

After two years of experience with the program, the senior dietitian is increasingly convinced that there is a very real place for nutrition work with even as privileged a group as university students. The program has hardly begun; its potentialities are unlimited. It offers stimulating possibilities for a dietitian; takes advantage of every phase of her training—clinical consultation work, institution management, teaching ability, research technique—and offers the rich reward of seeing her advice applied toward the nutritional improvement of the young people whom she seeks to serve.

REFERENCES

(1) OHLSON, M. S.: The student dietitian: An experiment in cooperative education. J. Am. Dietet. A. 17: 644, 1941.
(2) GILLAM, S. M.: A survey of the hospital dietitian and her job. Part I. J. Am. Dietet. A. 16: 485, 1940.

Labor Forecast in Food Industries in New York State. In the food industries, the prospect of meeting labor demands is not bright. War plants are having difficulties in maintaining employment levels. The farmers, hospitals and other sections of the food industries have done a splendid job to develop labor supply through the use of volunteer workers, women, young people, part-time workers. The responsibility of the food industries and government is to keep up war production by helping workers obtain the proper foods. Women must be kept on the job until the war is over. Their shopping and nutritional problems must be solved so that such problems do not contribute to their leaving industry.—*Joyce Campbell, Regional Labor Market Analyst, War Manpower Commission, New York State, in a report presented before the New York State Dietetic Association, New York, May 26, 1944.*

Postwar Food Planning. Plans to take the British people off their prewar diet of "tea and margarine" and onto a diet of butter, milk and meat are being worked out for the government by dietitians. This will involve the creation of a permanent food commission with wide powers to plan the production and distribution of health-supporting foods for both rich and poor. Its work will include (1) reorganization of British agriculture to increase the production of milk, eggs, fruit, vegetables and meat, (2) distribution of these foods to secure a diet adequate for health within the reach of every family, however poor, and (3) organization of food either by home production or import, if necessary, to make certain that at no time will there be a shortage of any essential food.

Food experts who have advised the government during the war are now planning for the postwar era. They hold that such a commission will revolutionize agriculture and lay the foundation of prosperity in other basic industries. White bread, margarine, jam and tea, regarded by large masses of people as a staple diet, will be discouraged. Instead, the people will be given an opportunity to increase their consumption of milk, eggs, fruit, vegetables and meat. World food policy, with which Great Britain will be closely linked, will be directed to the same end. The intention is now to extend the policy of "enough to eat" to "enough of the right kind of food." Perhaps the most valuable dietetic reform to come from wartime food control was the abolition of white bread. The deficiency of vitamins and minerals produced in "the staff of life" was one of the greatest evils of our civilization. —*Foreign Letters, J. A. M. A., 124: 316, 1944.*

FOOD CONTROL AND FOOD RATIONING ACCOUNTING[1]

NEVA HENRIETTA RADELL, PH.D.

Associate in Home Economics, Teachers College, Columbia University

THIS diversified program with its theme, "Food and Nutrition in a Changing World," portrays the "changing" dietitian of today as nutritionist, executive, business manager, and teacher, in all types of food service organizations. With this in mind, I shall try to present a few principles, common to all, on the subject of food control and food rationing accounting.

Food control is to the alert food manager what knowledge of nutrition in disease is to the therapeutic dietitian. On this concept, then, is built a system of food control tailored to fit the particular operation, which becomes part of planning the menu, and buying, receiving, storing, preparing, and serving food. Food control is not just a managerial idiosyncrasy. The attitude of control must permeate the entire organization from the executive, through the supervisors who take key responsibilities, to the employees who, through training, carry out their duties with that accuracy of performance so necessary to a successful food control system.

THE ACCOUNTANT'S MONTHLY REPORT

For some time it has been recognized that regular accounting procedures in food service organizations and institutions give an over-all picture of the cost of food in the form of a monthly profit and loss statement. Many accountants find it impossible to have these operating statements in the hands of the dietitian-managers before the tenth or fifteenth of the month following the period of operation which they cover, and therefore because of the time element this statement, though important in an accounting system and for a historical record, is of little value for real food control.

TABLE 1

Blank Cafeteria

Profit and Loss Statement for the Month of April 1944

Sales	$10,000	100%
Food Cost	4,900	49
Gross Profit	$5,100	51%
Labor Cost	3,700	37
Other Expenses	1,100	11
Total expenses	$4,800	48%
Net Profit	$300	3%

TABLE 2

Blank Institution

Food Service Department
Operating Statement for April 1944
Total Meals Served 120,000

		Per meal
Food Cost	$22,000	$0.183
Labor Cost	16,000	0.133
Other Expenses	2,000	0.017
Total	$40,000	$0.333

Tables 1 and 2 illustrate two regular accounting statements, one for an organization with sales and the other for a food service department operated as an expense to the institution.

[1] Read before the New York State Dietetic Association, New York, May 26, 1944.

In the first case (Table 1), the sales amount to $10,000, which in terms of percentage equals 100. The food cost, adjusted at the beginning and ending of inventories, and the cost of employees' meals is $4,900 or 49 per cent. Subtracting the food cost from sales gives the gross profit, $5,100 or 51 per cent. Labor cost here includes salaries and wages, cost of meals served to staff and employees, Social Security tax or other retirement annuity payment, workmen's compensation insurance fee, and any charges to employee reserve funds. This amount, $3,700 or 37 per cent, and all other expenses, $1,100 or 11 per cent, total $4,800, which subtracted from the gross profit leaves a net profit of $300 or 3 per cent of sales.

In the case of the second statement (Table 2), there being no sales connected with the department, the costs and expenses are added to find the total for the period. In a second column, the unit costs per meal are shown, which are obtained by dividing each cost and expense item by the number of meals served. For interpretation, the unit costs are more significant than the total figures, but again they are of little value for control since the period covered is so far in the past. Then, too, in some organizations of this type the accountants never submit statements to the department heads, and operation, perforce, continues in a blind manner.

The first column, then, in each statement is a general financial report, and the second represents to many dietitians the extent of their information for control.

DAILY OPERATING STATEMENT

In contrast to the accountant's financial report issued monthly, the daily operating statement giving in summary form or in detailed analysis the cost of food used for a day is an effective food control report. The day has been accepted as the ideal period for the study of food costs and point allotments, for the report can be completed the following morning and any adjustment necessary can be made in that day's service.

Table 3 illustrates a daily food cost report in summary, including ration point summary. Table 4 illustrates a more detailed report in which certain items included in Table 3 are broken down.

SUPPORTING RECORDS NECESSARY FOR DAILY COST REPORT

In order to obtain a daily cost report, a department must have supporting records for adequate control.

Storeroom control, which begins with a lock and key, extends through requisitions, purchase record and perpetual inventory cards, and physical inventories. This forms the backbone, but is by no means all the control needed. Figure 1 is an illustration of the purchase record and perpetual inventory in a Kardex visible file used in Teachers College Food Service Department.

Refrigerator control is just as important, though often neglected, and it follows the same pattern as the storeroom control. Figure 2 is a sample purchase record, for meats, fresh fruits and vegetables, dairy products, and other items, kept in a visible ring binder. The purchase record cards for both staples and perishables furnish the prices and point values for completing the requisitions for the daily cost reports.

Meat control is in a separate category, for meat is the most expensive item on the menu, and therefore the greatest attention should be given its handling from the

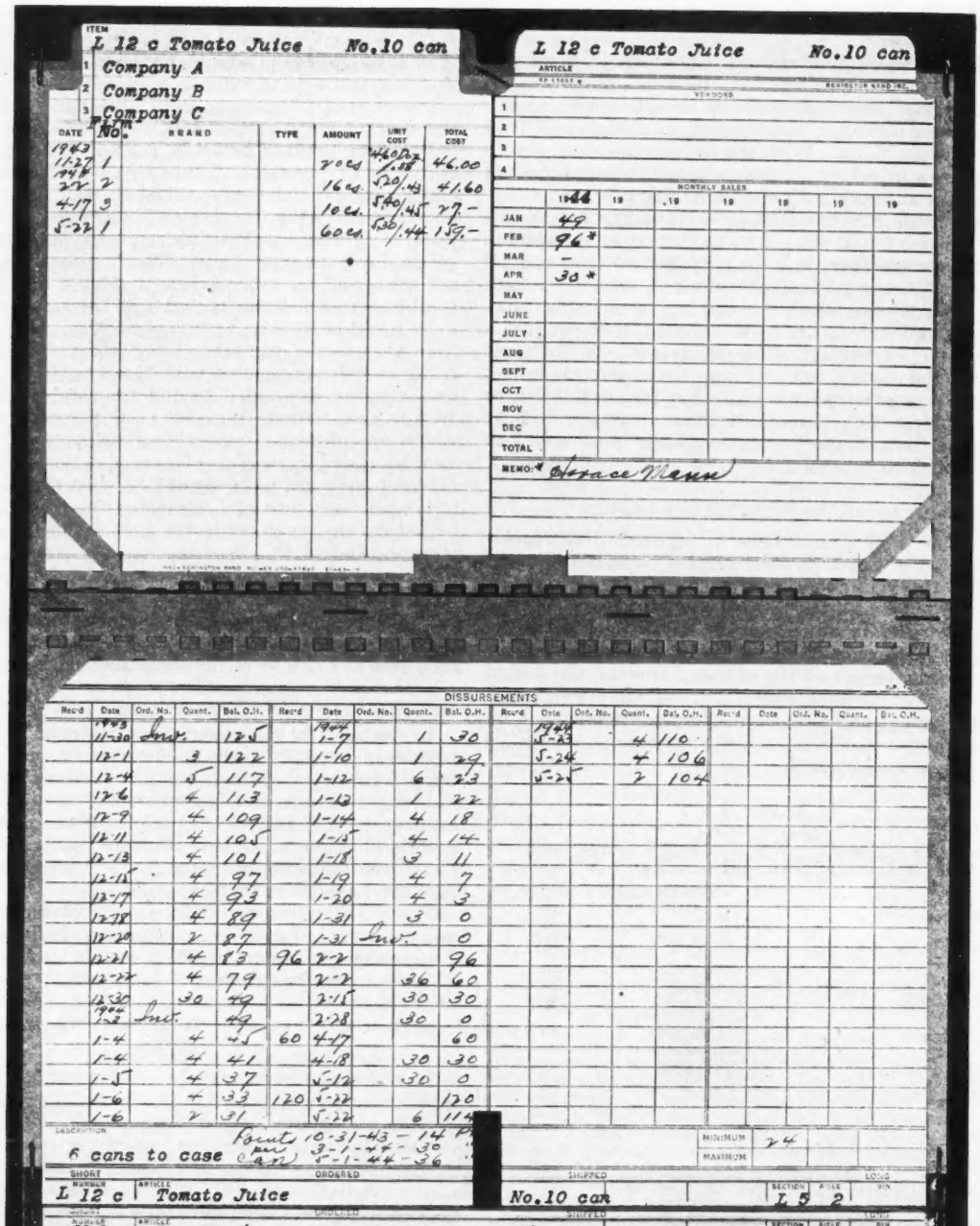
ITEM
L 12 c Tomato Juice No.10 can
1 Company A
2 Company B
3 Company C
DATE | P.O. No. | BRAND | TYPE | AMOUNT | UNIT COST | TOTAL COST
1943 11-27 1 7 ocs 6.60 46.00
1944 2-22 2 16 cs 2.60 41.60
4-17 3 10 cs 2.70 27.-
5-22 1 60 cs 2.50 150.-
L 12 c Tomato Juice No.10 can
ARTICLE
VENDORS
1 2 3 4
MONTHLY SALES
1944 19 19 19 19 19 19
JAN 49
FEB 96*
MAR —
APR 30*
MAY JUNE JULY AUG SEPT OCT NOV DEC
TOTAL
MEMO: * Horace Mann
DISBURSEMENTS
Rec'd | Date | Ord. No. | Quant. | Bal. O.H.
1943 11-30 Inv. 125
12-1 3 122
12-4 5 117
12-6 4 113
12-9 4 109
12-11 4 105
12-13 4 101
12-15 4 97
12-17 4 93
12-18 4 89
12-20 2 87
12-21 4 83
12-22 4 79
12-30 30 49
1944 1-2 Inv. 49
1-4 4 45
1-4 4 41
1-5 4 37
1-6 4 33
1-6 2 31
Rec'd | Date | Quant. | Bal. O.H.
1944 1-7 1 30
1-10 1 29
1-12 6 23
1-13 1 22
1-14 4 18
1-15 4 14
1-18 3 11
1-19 4 7
1-20 4 3
1-31 3 0
1-31 Inv. 0
2-2 96
2-7 36 60
2-15 30 30
2-28 30 0
4-17 60
4-18 30 30
5-12 30 0
5-22 120
6 120 114
Rec'd | Date | Ord. No. | Quant. | Bal. O.H.
1944 5-23 4 110
5-24 4 106
5-25 2 104
DESCRIPTION
6 cans to case
Count 10-31-43 — 14 Pkgs
Inv. 3-1-44 — 30
5-1-44 — 36
MINIMUM 24
MAXIMUM
SHORT NUMBER | ARTICLE | ORDERED | SHIPPED | LONG BIN
L 12 c | Tomato Juice | No.10 can | L 5 2
M 1 | Arrowroot | Lb.can | L 3 2
M 2 a | Gelatin, granulated | Lb. pkg. | L 3 2

FIG. 1

time of purchase through service. When meat is delivered or butchered, each piece is checked and weighed, and a tag attached by means of a pin. This tag, a 3 by 5-in. card cut in thirds, bears the date of delivery, name of cut, and weight. At the bottom and to the right is entered the date of issue when the meat is actually used.

As each item is requisitioned and issued, the tag is removed, the date entered, and the tag fastened to the requisition. This system is in common usage in hotels and restaurants.

In order to obtain *production control*, a production record is kept which places the responsibility for food preparation on the proper person, who is expected to know the amounts needed, and does not leave the decisions to guesswork on the part of employees. A production record also correlates proper purchasing, requisitioning, and service.

Portion control consists of setting up standard portion sizes, giving directions on the service of each, and checking the results.

All this may sound like a long and complicated process, this food control, but it takes time, even years, to arrive at the ultimate goal—a daily food cost report that is accurate, informative, and *yours*.

TEACHERS COLLEGE, COLUMBIA UNIVERSITY
FOOD SERVICE DEPARTMENT
PURCHASE RECORD

DATE	Vendor	AMOUNT	COST Unit	COST Total	POINTS Unit	POINTS Total
1944 5-4	1	5 lb	3 lb	16.64	—	—
5-8	2	6 4	30½	19.52	—	—
5-10	1	5 0	32½	16.25	—	—
5-17	2	6 0	30½	18.30	—	—

VENDORS: 1. A Company; 2. B Company; 3. C Company.

ARTICLE: Beef Liver

DESCRIPTION

FIG. 2

TABLE 3

Food cost summary

Sales for the day: $738.59; today's food cost, per cent: 49.4; to date food cost, per cent: 50.6; date: May 25, 1944; day: Thursday

REQUISITIONS TO:	AMOUNT	POINTS Red	POINTS Blue	SUGAR
Kitchen	$176.20	1,118	53	
Bakeshop	42.30	42		100
Salad unit	47.25	73		24
Pantry or counter	81.65	132	313	
Other	18.20		547	
Total	$365.60	1,365	913	124

Point summary

	TODAY Allotment	TODAY Used	TO DATE Allotment	TO DATE Used	OVER	UNDER
Meats, fats, etc.	1,850	1,365	66,740	62,070		4,670
Processed food	1,162	913	41,830	38,435		3,395
Sugar	55	124	1,998	2,163	165	

TABLE 4

Daily food cost report

(A Food Cost Summary and Point Summary to be included here as in Table 3)

	AMOUNT	POINTS		AMOUNT	POINTS
Meats	$56.63	933	Fruits and juices		
Fish	1.74	54	Fresh	$35.16	
Fowl	35.35		Frozen	10.00	
Cheese	7.08	156	Canned	8.19	860
Eggs	6.46		Dried	0.55	
Fats and oils	16.15	222	Vegetables and juices		
			Fresh	54.95	
Total		1,365	Frozen	11.80	
Milk	68.08		Canned	6.50	33
Sugar	9.68	124	Dried	1.19	20
			Total		913
			Bread, rolls (purchased)	6.36	
			Cereals and cereal products	4.80	
			Groceries	24.93	
Total Cost				$365.60	

CONSTRUCTING WARTIME EQUIPMENT[1]

ANN HAINS

Administrative Dietitian, St. Anthony Hospital, Oklahoma City

THE past few years have brought about many changes that vitally affect our food departments. Our continual problems concern food supplies, rationing, and personnel. Much of the difficulty arising as a result is so inescapable or unavoidable that we do what we can and dismiss situations apparently impossible to correct with a shrug and such pessimistic comments as—"It can't be helped," or "There is nothing that can be done about it."

In prewar days an inconvenient physical setup was not too confusing, for employees were very capable and production was geared to a slower pace. Then we planned and hoped for a better physical layout but available funds were not much more than sufficient to take care of emergencies. With increased clientele and less efficient employees, many of us found it impossible to maintain food service standards when handicapped by the same paucity of equipment. At St. Anthony Hospital, our bed capacity has been increased by 100, and we always function at capacity. We also have an increased staff and 50 more student nurses to feed.

Fortunately, our central service room was originally well outfitted with excellent monel metal and stainless steel equipment sufficient for the needs of our present tray service. We were not so well prepared in our other units. Few changes had been made while satisfactory equipment was available; since then, we have had to depend on the ingenuity of the department and the engineering staff to solve our difficulties.

During peacetime, we bought most of our cakes and cookies. With the increased census, this became not only burdensomely expensive but also inconvenient, due to fewer wholesale bakeries and uncertain deliveries. We have plenty of room under the kitchen canopy and were fortunate in getting a 3-tier Magic Chef bake oven. We also purchased a 20-qt. Hobart mixer to supplement the larger one. But our chief pride is our homemade bake table, designed by Sister Margaret and built by the assistant engineer. This table, 105 x 48 in., 33 in. high, is placed in the center of the bake unit. The two sides are identical, permitting both to be used at the same time. Each side has two tin-lined bins 19 in. wide, 21 in. long, and 16 in. deep, one for flour and one for sugar. Between these are four drawers, 20 x 22 x 7 in., for small baking equipment. The area beneath these drawers is not sectioned and the large bake pans kept there can be taken out from either side. The openings to this area have two hinged doors, 13½ x 23 in. On the top of the table we have two removable cabinets, 12 in. high and 8½ in. wide, which extend the full width of the table. One of these has a shelf and both have sliding doors and are used for colorings, flavorings, spices, and measuring cups. With the exception of the maple top, the table is made of ¾-in. 5-ply veneer paneling. The top is made of eight strips of 1¾-in. maple, bolted together with 1½-in. galvanized iron rods. The top was soaked in hot linseed oil to make it stain-free.

Probably our greatest need was in our nurses' dining room. Our only permanent piece of equipment there was a monel metal double battery of 8-gal. coffee urns and one 8-gal. hot-water urn, with a steam warmer beneath. Food was kept warm on a small Ideal food cart; toast was made on a 2-slice Savory toaster; dishes were washed in our one machine at the far end of the central service room and, when returned, were kept on open racks. Ordinary wooden tables made up the rest of the serving unit.

We removed all but the battery of coffee urns, since these were already properly placed at the end of the line. We then bought a secondhand galvanized steam-table with room for the following white enameled pans: two for meat, 12 x 20 in., four for vegetables, and three for gravy or sauces. The bottom of this table is a 2-shelf dish-warmer. Since this piece of equipment had no edges or platforms, we had to build a cabinet to start the cafeteria counter line. The cabinet is 36 in. high and 33 in. wide, as are the urn and steam-tables, and 45 in. long. The first 19 in. of space holds two stacks of aluminum trays. The Savory toaster occupies the next 14 in., while the final 12 in. of space remains vacant except at mealtime, when it is used for stacks of hot plates. On the service side of this cabinet are drawers of various depths which are half the width of the table. On the dining room side, the cabinet is closed up to within 6 in. of the top, where there are two drawers for silverware, each sectioned once. These are 18 in. long and extend back 16 in. The sides of the drawers are of triple thickness 4 in. from the back to keep them from tipping under the weight of the silver; that is, the drawers pull out just 12 in., which happens to be the width of the adjoining railing.

The space between the steam-table and the coffee urns was 10¾ ft. The cabinet which was built to fit this space is the same height and width as the rest of the equipment, and is closed on the dining room side. The first 45 in. is sectioned off and contains two rows of small drawers. The rest of this counter is well insulated with ½-in. Celotex and is our wartime substitute for a refrigerator. It has three sets of sliding doors which run in metal grooves and are fairly tight. The cooling unit, taken from an ordinary refrigerator, has a large, exposed surface area and is connected to our brine system with copper coils. Behind this is an electrically-controlled blower fan which is turned on only when needed and beneath is a refrigeration pan with drain connected. The three shelves are made of 1-in. unpainted maple slats. All pipes are covered with garden hose so that precipitation of moisture will not warp the wood. Although this air-conditioned unit is not so satisfactory as a refrigerator, we have found it a great help during our long hot season. A detailed check on temperatures gives us this average finding: one half hour after the fan was turned on and the doors closed, the temperature in the front of the unit was 33°F. and at the far end, 42°F.; with rather frequent use during mealtime, the temperature in the front of the unit was 40°F. and at the far end, 60°F.

In sorting through old equipment we found a copper-lined bain-marie with a hinged, 3-section, copper-lined cover. On the outside, the bottom and sides were covered with waterproof insulation. The bain-marie was set into the top of the air-conditioned cabinet to be used for keeping milk cool. Two sets of copper coils were placed around its sides and a copper pipe was connected to the drain. The coils, connected with the brine unit, frost over within 5 min. of the time the brine circuit is turned on. The cold water bath in the bain-marie is large enough for 130 half-pints of milk.

Another wooden cabinet, curving out from the coffee urns and serving to close the cafeteria counter, contains shelves for saucers and iced tea glasses. The final piece of wooden construction, a long dish cabinet placed behind

[1] This and the following two papers were presented before the Oklahoma Dietetic Association, April 15, 1944.

the service counter, is 50 in. high and reaches to the level of the window sills. It is made of four sections, 48 in. wide, with a set of sliding doors for each, the number of shelves in each section varying from 5 to 7.

All the wooden cabinets are of the same construction—the bottom of ordinary flooring, the remainder ¾-in. 5-ply veneer paneling. All tops, shelves, and the water-bath lid are covered with a cream plaid inlaid linoleum, fastened with metal rims. From the steam-table to the end of the service counter, there is a 3-section, chromium-covered brass railing. Since roach control is a problem, all equipment was thoroughly sprayed before and after painting.

Before these changes were made, the nurses took their trays into the pantry and scraped them. Dishes were then stacked on a cart and taken to the dishwashing machine in the central service room. At the time we made our alterations, we bought a single-tank machine. The door leading to the pantry was cut in half and the bottom closed permanently. The tables for used dishes, leading to the machine, were built to the level of this door, the top half of which is hooked open during meals and closed at other times. The nurses now take their trays to this opening and remove the silverware and milk bottles. Another door which was cut in the wall directly behind the food service counter, opens near the clean dish tables. The tables leading to and from the machine are made of galvanized iron.

After having our face lifted, we needed a paint job. The dining room is now a light cream color. In addition, we bought some French curtain rods of wood and made bright-flowered drapes.

We know our equipment is not perfect, but it has helped provide better food service for our nurses. It has also given the staff, the student dietitians, and the engineers some valuable experience which will be found useful when other materials are available.

Sugar and Shape

Whatever its effect on the human form may be, sugar does help hold the shape of cooked fruit by making the tissues more firm. In making fruit preserves, for example, the soft, more tender fruits like berries, cherries and peaches hold their shape better if they stand overnight in sugar before being cooked. Though the fruit loses juice and shrinks somewhat as it stands in sugar, it becomes more firm and is less likely to cook to pieces. Another way of holding the shape of fruit in preserves is to cook it in thick sugar syrup. Fruits that are naturally very firm, like Keiffer pears and quinces, on the other hand, may be made hard and tough by the action of sugar. They should be steamed or cooked in water before the sugar is added or cooked in thin syrup. The toughening or hardening effect of sugar on seeds and skins also affects the making of jams and marmalades. In making plum or gooseberry jam, the fruit is cooked in a little water until the skins are tender before sugar is added. Blackberries and black raspberries are crushed and brought slowly to boiling before adding sugar to help keep seeds from hardening, or the fruit is cooked a few minutes and then the seeds are sieved out.—*Excerpts from Food and Home Notes, USDA, July 1944.*

Care of Equipment

At the twenty-second annual convention of the Ohio Dietetic Association Mr. Jacques Berling, John Van Range Company, stressed the importance of cleanliness in the maintenance of equipment. Worn parts should be replaced before real trouble starts. Periodic inspection of all kitchen equipment was advised. Mr. Rieke, American Stove Company, Cleveland, mentioned the importance of having equipment properly leveled and adjusted, and thoroughly understood by the personnel. Open-top gas ranges must be kept free from grease and dirt accumulation. The grates and burners should be boiled in a solution of sal soda or Oakite at least once a week. In the closed-top type, the tops should be washed off with water and a good grease solvent. Proper adjustment of burners will lengthen their life. In an oven, grit and dirt often mar good performance. All spill-overs should be removed before the material has carbonized. All crumbs and encrusted materials should be removed from around the doors so that heat cannot escape. Accumulation of grease on a broiler will also cause trouble in the form of excessive smoking, lowering production efficiency. Grids and drip shields should be washed daily with a mild solvent solution. Keeping the fat clean and free from crumbs or other residue is an important point in the care of a deep-fat fryer. When starting a kettle of cold fat it is important to set the thermostat low so that the fat will melt slowly and not burn. Burners and thermostat should be checked twice a year. The griddle or fry top should be kept free of encrusted material with a metal scraper. The top should also be wiped frequently with a heavy, grease-absorbent cloth. It may be polished with a griddle stone, but must not be scratched. The griddle should never be overheated and should be turned low during a slack period. In order to get the best results from a steamer, the interior must be kept clean. In the improved type in which the shelf comes out when the door is opened, this shelf may be removed and thoroughly cleaned.

Mr. Kenneth Shaw, Hobart Manufacturing Company, mentioned the importance of increasing the workers' appreciation of equipment by chance remarks like: "Isn't it fine that we have such a good dishwasher. It would take a lot longer to wash them all by hand." Prolonging the life of the dishwashing machine may be accomplished by regular inspection and lubrication, avoiding overloading, and following the manufacturer's maintenance and operation instructions. More interest should be shown in the dishwashing unit and better operators hired.

With reference to coffee urns, Mr. Berling mentioned the differences in the water of different localities and described a method of removing lime deposits. Placing 1 qt. vinegar in the hot water boiler or the jacket of the urn, filling it up with water, and boiling for 5, 6, or more hours will loosen the lime deposits on sides and bottom of the boiler, and on the steam coil. "It is also good practice," he said, "to fill your coffee jar once a week and add one half cup baking soda for each 5 gallon capacity and allow to boil. When this is drained and thoroughly freshed, there will be a clean urn." Steam-tables and bain-maries should be drained nightly and all food particles removed from them.

Mr. Alvin E. Schmidt of the Schmidt Refrigeration Company outlined the proper care of a refrigerator as follows:

See that no water accumulates around the refrigerator or condensing unit. If a refrigerator suffers any abuse by having the cement coating broken, have it patched. Keep door gaskets clean. Seal all holes going through insulation. Oil hardware. Keep doors closed as much as possible and adjusted to a tight fit. Do not allow too much frost to accumulate on the coils. Do not obstruct the warm or cold air passages with stored products. Keep fan and back of blower coils clean. Clean the motor and the base of the condensing unit. Oil the motor regularly, but do not over-oil it. Do not tamper with the safety equipment. Never fuse motors over 40 per cent above name plate rating. Keep commutator clean of all dirt and oil. Use clean cloth. Test belt tension regularly. On V belts you should be able to twist the belt one quarter turn without too much pressure. Make sure that all electrical connections are tight. Should oil be noticed at any of the refrigeration connections, check those connections for leaks.

LAYOUT AND EQUIPMENT PROBLEMS IN WARTIME

MARGUERITE ROSS

Chief Dietitian, College Food Units, Oklahoma A. and M. College, Stillwater

IT WAS indeed fortunate that the Oklahoma A. and M. College food units were adequately equipped prior to the war; thus, when it became necessary to shift our food service to military needs few changes were necessary.

Our organization at present operates five mess halls which serve military personnel and, more recently, an infirmary. During the peak of the military program on the campus, we served approximately 4500 persons at each meal.

The College Cafeteria is the oldest building in the group. It has had an eventful history, having been used as a farm machinery building, a gymnasium, and an armory, and finally, a cafeteria. Several annexes had been built from time to time to allow room for special party service prior to the time when the building was devoted entirely to military use.

With the arrival of military personnel, the first change necessary was to convert two small storerooms into three walk-in refrigerators, making a total of four in the building. Since we no longer have special parties, one annex is now used as a storeroom. Part of another has been converted into a dishwashing unit. With a priority provided by the Army, we were able to obtain a double-tank dishwashing machine. Our small, one-tank dishwasher was also moved to this part of the building, and is used for glasses and plastic trays. This conversion makes a convenient and workable arrangement.

Moving the dishwashing unit from the kitchen allows added space for salad preparation and range units. Secondhand equipment purchased from a nearby institution makes up the latter, which consists of one range, one 3-shelf vegetable steamer, two steam-jacketed kettles (one 20-gal. and one 30-gal.), one meat roaster, and a 60-qt. mixer. This, added to our three range units, a 3-shelf vegetable steamer, a 30-gal. steam-jacketed kettle, and a 30-qt. mixer, makes a fairly adequate range and steam department.

We found that preparing salad vegetables for 1500 persons by means of the attachments on a C-10 Hobart mixer was an impossible task. Since our average replacement allowance for the slicer attachment was one blade a week, we appealed for priority rating which enabled us to get the latest model, a self-emptying, 21-in.-bowl chopping machine.

The old double-battery coffeemaker (capacity of each urn, 2½ gal.), with its badly cracked and corroded porcelain interior, was replaced by a gray-enameled exterior victory model consisting of a 3-piece battery of two 5-gal. coffee urns and a center container for water.

The only change in the dining room was the installation of a refrigerated water system and fountains. Omitting the water glasses from the food service line is an excellent time-saver, effecting an average saving of 10 min. for every 500 persons served. This method will also be exceedingly helpful when the dining room is reconverted to civilian use. This cafeteria was formerly used for men students, including the college athletes, who almost invariably took as many glasses of water as the tray would hold, usually from three to five.

Murray Hall, opened in 1935, has fine equipment throughout, and for the most part has proved very adequate for the messing of approximately 500 Waves stationed here. In Willard and Cordell Halls, opened in 1939, the kitchens are equipped identically; only the kitchen floor plans differ, that in Cordell being long and narrow while in Willard it is rectangular and compact. These were so planned originally to permit institution management students in the Household Science Department to do actual work under the conditions prevailing in each type of layout, and to study and compare the various kitchen arrangements and floor plans as a part of their class and laboratory work. Even though these halls were not planned solely for cafeteria service, they proved on the whole to be quite adequate for this purpose.

The only improvised equipment necessary has been the clearing tables. These provide a center to which trainees return trays and dishes so that these can be more quickly scraped and assembled for the dishwashing process. This system served to make the dietitians more aware of the need of motion studies in connection with all the processes in a kitchen and dining hall. Because of the different floor plans and routines in the various halls, each clearing table is unlike the others in various respects, but essentially they are long narrow wooden tables, aproned on three sides, with two round holes for disposal of paper waste and garbage into the cans below. In two of the halls, trays and china are still in use; in the other three, regulation G.I. sectioned mess trays. This means that the dimensions of the tables and the number of employees required necessarily vary according to the number of pieces of equipment to be handled. In some of the halls, the trainees remove all the articles from their trays and stack these on the tables; in another, trainees remove only the silver. This, of course, means that the number of persons needed to operate each unit varies.

The fifth unit in our setup is a specially constructed mess hall. Construction of this building began February 15, 1943 and the first meal was served there on May 1, 1943. As might be expected, all equipment here is strictly wartime—wooden tables, light-weight stainless steel counter equipment set in wooden frames, a battery of six ranges, two deep-fat fryers, four 60-gal. and one 80-gal. enameled-metal steam-jacketed kettles, two 3-shelf vegetable steamers (cast construction), two 60-qt. mixers (both secondhand), a concrete victory model potato peeler, a 4-shelf bake oven, two walk-in refrigerators, four upright iceboxes, an 80-gal. G.I. enameled-metal, steam-jacketed coffeemaker, galvanized metal sinks and drainboards, and a double-tank dishwashing machine. The dining room is equipped with six fountains fed by a central refrigerated water system. There are two service lines. The entire unit has proved to be well planned and equipped for Army feeding.

The mess trays have served as most useful pieces of equipment, since they save dishes, now so difficult to replace. Their use has also shortened the dishwashing period and decreased the number of employees necessary for this task. We are also using mess trays at present in the infirmary during its reorganization, thus lightening the burden of dishwashing and service.

Wooden racks hold trays and mixer parts, and serve as shelves for various other pieces of equipment and supplies. Wooden labels are used to mark proper places for meats, vegetables, and other products in walk-in refrigerators and in storerooms, to indicate where certain items are placed. By such simple means, much time, labor, and food are saved, since materials can be readily located.

Annette Snapper, who recently spent some time in England, has reported that English restaurant operators have developed a very fine system of handling repairs and replacements of food service equipment. Necessary

telephone numbers and instructions concerning the various items of equipment are posted in prominent places in the kitchens. There the restaurant operators fully realize that if they do not keep their equipment in working order, they will soon be forced out of business. We, too, must keep our equipment units in repair, for in so doing we not only help ourselves but the war effort as well, since the materials of which they are constructed are so critically essential to a successful culmination of the war.

Public Health in Russia

Some indication of the scope of medical research in the USSR can be obtained by mention of even a few institutions. Outstanding among them is the Gorky All-Union Institute of Experimental Medicine, commonly known by its Russian initials VIEM. Its activities serve as a model for all medical research institutions in the Soviet Union. With an annual budget of some 25 million rubles, its 30 departments with their 60 laboratories are able to carry on a wide variety of studies, all of which seek to utilize the latest achievements in physics and chemistry. The 600 medical workers are directed by Professor N. Grashchenkov, a noted brain surgeon. VIEM maintains several clinics to aid in relating its research to practical questions of health protection. Some of the foremost names in Soviet medicine are associated with VIEM.

The USSR Chemico-Pharmaceutical Research Institute has representatives on a USSR Vitamin Committee organized in 1941 by the health and food industry commissariats to plan and direct the theory and practice of "vitaminology." A prominent place on this committee is accorded the Nutrition Research Institute of the Health Commissariat. One part of this Institute is the Therapeutic Nutrition Clinic in Moscow. Nutrition research is of particular importance because of the wide network of public dining facilities in factories, schools, etc. Special diet dining rooms have already made their appearance in many enterprises. Prophylactic diets to decrease occupational diseases have been worked out. Research on the use of carotene in the treatment of burns and frostbite was undertaken in 1941. Professor Kirchensteins reported early in 1941 on the significance of vitamins in the prophylaxis and treatment of infectious diseases. The USSR Vitamin Committee receives hundreds of reports from Soviet research institutes, such as that of the Bechterev Brain Institute on administering vitamin B_1 in the treatment of mentally diseased patients and that of the Central Institute for Protection of Mother and Child on the lack of vitamin C in the blood of children with measles. It is thereby in a position to coordinate these findings along with newer ones constantly forthcoming from the many different institutions carrying on vitamin research.

In the first days of the war . . . the 160,000 Red Cross branches in farms, offices, industrial enterprises and schools, with 8,000,000 members, the majority of whom were women, were a powerful force in maintaining wartime health services. . . . They were active, too, in staffing evacuation centers and organizing feeding arrangements en route; all trains carrying evacuées from Leningrad, for example, were accompanied by Red Cross workers.

In districts of the Moscow region from which the Nazis were driven, the Soviets found 50 hospitals, 110 clinics, and 120 nurseries destroyed. In a few weeks two thirds of these had resumed their work in new or substitute quarters. In the reoccupied towns, as in the rear generally, the cooperation of the population is indispensable to the success of medical services. A block committee system in one town formerly in Nazi hands ensured close check-up by the people themselves of the sanitary conditions of dwellings. . . . The refugee-swollen population of Leningrad is said to have reached 9,000,000; during the 16-months seige many died when daily food rations at one time fell to 4 oz. bread. That no epidemic racked the famine and war-weakened people is tribute to the self-help principle motivating them (the Leningrad Construction Workers Union organized squads to make emergency repairs and instruct the population in keeping water mains and sewer pipes in order; the Food Workers Union trained 1400 nurses and assistants, etc.) and to the medical personnel who never slackened their efforts in caring for the sick and wounded of a beleaguered city. . . . The Soviet blood transfusion network ensures that the donors are not only thoroughly examined for physical fitness, but that they will quickly recover from the loss of blood. Each donor is provided at the transfusion center with a large hot meal of soup, meat, vegetable, dessert and beverage, and also with a card putting her (the woman donor predominates) in the largest ration category for a month. . . .

To ensure the good health of Soviet children, the Council of Peoples Commissars at the end of 1942 ordered an increase in the vitamin content of food served in kindergartens and other children's institutions, the construction of additional dietetic dining rooms for children, and the appointment of district and city pediatricians to be responsible for the health of children in their locality.

The fruit of the close relationship between medical workers and the Soviet population generally has been a willingness on the part of both to initiate and accept change. Soviet medical science is comparatively free of the necessity of overcoming resistance to its continued development either on the part of its own members or of the public.—*Excerpts from the brochure, "Soviet Health Care," by Rose Maurer, distributed by the American Russian Institute for Cultural Relations With the Soviet Union, Inc., 56 West 45th Street, New York 19, N. Y.*

Organization of an Industrial Cafeteria

There are few things that have ever impressed me more than the opening day of the cafeteria. At 9:30 that morning I was given my first five cafeteria employees, and you can believe me, there were never five people more welcome. I greeted them with a sigh of relief and the statement that "we have 225 lunches to prepare in the next 2½ hours—we're having sandwiches, soup, coffee, ice cream and milk. It looks as if we're going to be a little busy."

Installation of equipment had not been completed in the kitchen —in fact, we had the sum total of a cook's range connected. We transported water, that first day, from another part of the building. Refrigeration was not complete, and of course there was no steam available. The old-fashioned open kettle method was used to make coffee which was carried to the counter to be served. With all our problems we were ready to serve by noon. The service trays had not arrived, so the customers went through the line picnic style. Most of them thought it was great, after having carried box lunches. It was far from what I would have anticipated for an opening day lunch.

Today we have four separate cafeteria units, serving approximately 17,000 meals in a 24-hour day. In addition, approximately 10,000 between-meal snacks are served during rest periods from food carts. A mobile unit is used for another building situated too far away for the employees to come to a cafeteria for lunch.

We have a seating capacity of 900 in the two dining rooms at the main assembly plant with two service counters in each. One counter in each dining room is set up to serve hot food from electrically-heated counters; the other is used for sandwiches, soup, salads, beverages and desserts. Both dining rooms are alike. The dining rooms at the Modification Center have a seating capacity of 360 and 450 with two service counters in each. The dishwashing room is in the rear of each cafeteria, where each employee carries his own tray after finishing his meal. Silverware and papers are taken off the tray by the customers and put in containers before trays are placed in the window.

When additional cafeteria units were proposed, I worked with a plant engineer on the layout of the cafeteria floor plan, recommending equipment needed and suggesting the placing of that equipment. Lists of small equipment were prepared and specifications outlined. With each new unit, we attempted to make changes that would increase the efficiency of operation.

One half hour is allowed each employee in the plant for lunch. Every 15 minutes a group is scheduled to come into the cafeteria. Ten groups come in during the busy 2½-hour lunch period. We have speeded up the movement of the line by using cartoons and posters suggesting that employees have their money ready, pick up plates faster, give their orders before being asked, and walk quickly through the line. Most of the customers place their money on the tray, thereby enabling the cashier to have change ready for them before they reach the end of the line. Customers move through the line now at a rate of 10 to 12 per minute. I hope to increase this to at least 15 per minute.—*Excerpts from a paper presented by E. Lynnette Gatten, director of cafeterias, Glenn L. Martin-Nebraska Company, before the American Dietetic Association, Pittsburgh, October 22, 1943.*

EMERGENCY DEVICES IN THE FOOD SERVICE DEPARTMENT

LUCY WRIGHT WOODSON

Dietitian, Young Women's Christian Association, Oklahoma City

THE first morning I reported for duty at the cafeteria of the Young Women's Christian Association, I observed that there were wooden slats at each working station in the kitchen, on which the workers stood. A lively young cook remarked, "You would be surprised how much these slats save your feet." These, of course, were not wartime equipment but they might well be, for all possible means of reducing fatigue in overburdened personnel at present should be considered. Boardwalks must be kept in repair to prevent accidents, but they are well worth the necessary care, for they are resilient and undoubtedly lessen weariness due to tired feet.

Just as any of us may be prone to take for granted the equipment of our own kitchens, so I had accepted our proof-room used in making light rolls. I learned that this had been built into the original kitchen, but its construction is so simple that it could have been added at any time. It is a pantry, 51 x 49 x 85 in., with tile walls and a wallboard ceiling. At each side of the door as one enters are two sets of shelves, one a metal rack of seven shelves, the other a wooden group of five. The heating unit, rigged up by our engineer, consists of a coil of electric wiring protected by a cage of metal lath, placed about 10 in. above the floor. Additional heat is supplied by a 150-watt light bulb near the ceiling.

Another arrangement which is rather unusual is that each cook has an equipment box for her individual use. These boxes are prewar tin bread boxes with hinged cover, a padlock, and two keys. Each box contains what we call "standard equipment": a set of "Mary Ann" cups, a quart measure, a pint measure, measuring spoons, a spatula, a tasting spoon, a strainer, and a small scoop. In addition, every cook has special equipment according to her particular needs. For example, the morning vegetable cook has such additional equipment as a paring knife, three mixing bowls, a #30 ice cream dipper, a large fork, an egg slicer, two slitted spatulas, a pastry brush, an egg beater, and scissors. This convenient arrangement is helpful in that the cook personally assumes responsibility for seeing that her equipment does not stray to other parts of the kitchen. Other cooks have "Mary Ann" cups, in various sizes, which are soldered to long spoon handles of the five-and-ten-cent store variety. Such dippers are useful for measuring salad dressing and melted fat, and ladling soft pie fillings into the shells. One of the dietitian's duties is to check these equipment boxes and obtain replacements when needed.

Our bun-warmer, a piece of homemade equipment, is made of riveted, galvanized sheet iron, insulated with wood. The doors are hinged on the outside and have screen-door springs on the inside. The door frames are lined with a felt strip similar to that used on Model-T Ford car doors. The warmer is $41\frac{2}{3}$ in. wide, $14\frac{1}{2}$ in. deep, $58\frac{1}{2}$ in. high, and has 5-in. legs and four shelves, on the bottom one of which we place a long pan of hot water to supply moisture. The electric heating element is below the shelf and a light globe is connected to this unit which serves to indicate when the current is on.

At our soda fountain we have a breakfast-cooking center, made by our engineer, which consists of a monel metal wall protector, canopy, and table. The latter supports the hot plate, grill, and waffle irons. Directly beneath the table are food-warming drawers, taken from large iceboxes, which are equipped with electric heating elements and monel metal fronts.

Probably the most important wartime equipment we have is a 3-tub pot-washer's sink made of concrete. Our old copper sinks had been dented and worn thin by hard usage until they were no longer repairable. The three large hoppers, made approximately of a mixture of 3 parts sand, 1 part cement, and 1 part gravel, were finished with a fine, smooth surface. These tubs are $40\frac{1}{2}$ x $30\frac{1}{4}$ in. and $13\frac{1}{2}$ in. deep, reinforced at the outer edges by angle iron and joined by strap iron. The cement is $2\frac{3}{4}$ in. thick at the top edge and increases to a thickness of about 5 in. at the bottom. The lower inner width of the basins measures $30\frac{1}{2}$ in. We believe these sinks will last a long time, and it is a great relief not to have the nuisance of constantly recurring leaks.

Since clean trays and dishes are now brought to the cafeteria line, the engineer built a cart, similar to a tea wagon, for this purpose. It has ball-bearing wheels 3 in. in diameter, and an outer frame made of $\frac{3}{4}$-in. pipe salvaged from an old elevator gate. To this frame are screwed two large aluminum trays, $22\frac{1}{2}$ x $16\frac{1}{2}$ in., which constitute the two shelves. The top of the cart is $26\frac{1}{2}$ in. above the wheels; the lower shelf, 12 in. below this point or $17\frac{1}{2}$ in. above the floor.

Since we are in Oklahoma, corn bread is a "must" on our counter each day. The large mixing bowl in which corn bread batter is mixed by the electric mixer is too large for one woman to carry, so a 3-wheeled iron truck was made which supports a cylindrical iron band that holds the large bowl of batter to be transported to the ovens.

The most efficient and careful use of equipment, of course, is one of the best possible means of conservation now. Formerly we thought apples for Waldorf salad should be diced, and since there is no dicing attachment for our power machine, the hand labor was quite tedious. Finally we tried using the slicer, and found that Waldorf salad with apples in small slices is not only acceptable to our guests but also a great time-saver.

A valuable inheritance from former staff members (Mrs. Virginia Beedle, manager; Mrs. Betty Stearns Edge and Mildred Smith, assistants) was a file of standardized recipes which I have tried not to neglect. The cards are in three colors: blue, pink, and white. Recipes on blue cards have been completely standardized as to weights of ingredients, yield in volume or weight, number of servings, cost per serving, and selling price. These are for kitchen use, as are the pink cards. The latter contain usable recipes which have not been worked out in complete detail. The seemingly endless repetition needed for accurate results gives our affiliating student dietitians an opportunity to assist with this standardization of recipes. The white cards, filed for the use of the food service director and dietary staff, carry the same information as the blue ones, with the addition of unit and total ingredient cost. All the cards have a protective coating of shellac or clear varnish. At her working station, each cook has a glass-covered frame, with an electric light above, which holds the recipes most often needed. Recipes less often used she places in a metal rack made to fit the card, which rests on a standard $5\frac{1}{2}$ in. above her work table. The cooks use scales in all their work:

balance scales which weigh in amounts as small as a quarter of an ounce, and a household spring-type scale for larger amounts.

These are some of the ways we have solved our equipment problems in wartime. We hope they may suggest to others the solution to similar problems.

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Student Dietitians Needed

College graduates who have majored in dietetics are needed for training as student dietitians in Army and Veterans' hospitals. Student Dietitians in Army hospitals will be paid $720 a year. After 6 months they will be advanced to Apprentice Dietitian at $1,752 a year, and in 6 more months they will be eligible for appointment as Second Lieutenants in the Army. The base pay of Second Lieutenants is $1,800 a year plus quarters (or rent allowance) and $21 a month toward subsistence. The Veterans Administration pays its Student Dietitians $1,752 a year. During the training period students are required to spend approximately seven weeks without pay while getting special training at civilian hospitals to furnish experience not obtainable in Veterans' hospitals. After 12 months' training as students, they will be eligible for appointments as Staff Dietitian at $2,190 a year.

Applicants will be required to pass a written test. They must have reached their twentieth birthday but must not have passed their fortieth birthday at the time of reporting for their first assignment. Full information and forms for applying may be secured at first and second-class post offices, from the Commission's regional offices, or direct from the U. S. Civil Service Commission, Washington 25, D. C. Applications will be accepted by the Civil Service Commission until the needs of the service have been met. Persons who are now using their highest skills in war work should not apply. Appointments in the Federal service are made in accordance with War Manpower Commission policies.—*Press release received from U. S. Civil Service Commission, September 25, 1944.*

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Food Waste as an Administrative Problem

About 10 years ago a survey of the garbage problem was started at Eloise Hospital serving Wayne County, Michigan, located 16 miles west of Detroit, with 7000 to 10,000 patients, because this might be a key to reducing food costs, as well as improving the quality of food, its preparation and service. A study of eaten and particularly uneaten foods was inaugurated with these ends in view. *All* food scraps and remains, both solid and liquid, from tables and dishes were designated as "table garbage."

At first, in some wards caring for bed patients, table garbage obtained from trays averaged as high as 16 to 17 oz. per person per day with a general average of 7 oz. for the entire institution. In some dining rooms for aged and infirm patients, the amount of table garbage per person per day averaged from 6 to 12 oz. when this study was started. These amounts were reduced later to approximately 2 to 3 oz. per person per day. The table garbage average for the entire institution has been reduced to 2 to 3 oz. per person per day, which is a reduction of *one ton* of table garbage per day for this particular hospital.

These reductions were almost entirely automatic. The mere fact that records were being made and that some persons were seriously studying them, and calling the attention of the persons responsible for preparing and serving food to discrepancies and failures to reduce amounts of table garbage, in proportion to the reductions made by other food service stations, tended to create a consciousness of the situation and an alertness that did not exist before.

Several discoveries were made. First, and most important, was that control of the amount of table garbage actually was control of the gross amount of *all* garbage. Also, close scrutiny of the monthly table garbage reports revealed several other facts. For instance, when the daily amount of table garbage was high and the number of second portions that day low, investigation generally revealed that the portions of most foods served were too large; or, the particular selection or combination of food unpopular; or, food was not appetizingly prepared. This last condition was usually due to the lack of proper seasoning or cooking.

When the amount of table garbage was low and the number of second portions that date high, investigation showed that portions of food were properly served and that other conditions were normal. When both table garbage and number of second portions served were low, a fairly good condition was indicated, which generally could be improved in some way.

When both table garbage and number of second portions served were high, investigation generally revealed that one or more of the following conditions existed: First, that some one item of food was being served in unreasonably large portions; second, that some item of food was extremely popular and was being consumed in preference to other foods served with it; or, third, that some item of food was unpopular and not being eaten.

Observation of the monthly reports and of relative actual conditions indicated that sudden and consistent increases in the amount of table garbage very often were caused by a lack of cooperation by, or between, employees concerned with food preparation and food service.—*Gruber, T. K., and Hammond, C. A., in American Journal of Psychiatry, 6: 886, 1943.*

FEEDING SCHOOL CHILDREN TO MEET CHEMICAL NEEDS[1]

ICIE G. MACY, PH.D.

Research Laboratory of the Children's Fund of Michigan, Detroit

IN 1941 THE Food and Nutrition Board of the National Research Council published "Recommended Daily Allowances" of calories, protein, calcium, iron, vitamins A and D, thiamin, riboflavin, niacin, and ascorbic acid for men, women and children. These allowances have since served as a guide or "yardstick" in the National Nutrition Program, in the allotment of food to the armed forces and to the civilian population by the Food Requirements Division of WFA, in planning for food and agricultural production goals, and in the United Nations Relief and Rehabilitation Program. These allowances have also been adopted by Canada and Australia, and are under consideration by Great Britain. Recently, Roberts (1) published a summary of the experimental work completed at the time the allowances were compiled, noting that insufficient data on the requirements of children between the preschool age and adolescence had been published. The year following the publication of the allowances, the Food and Nutrition Board approved further recommendations (2) for allowances of iodine, copper and vitamin K. Much of the uncertainty over what values to use in estimating the adequacy of a diet has been eliminated by the recommendations of the Board, but confusion still exists regarding chemical needs and chemical requirements, especially in childhood.

In any discussion of nutritional adequacy the use of the terms "need" or "requirement" is meaningless without specific delineation of the criteria on which the need or requirement is predicated. The word "requirement" is frequently used, but seldom defined so that the reader knows exactly what the requirement is for or what it is to accomplish. In referring to the chemical needs of the body, calcium requirement, for instance, may mean the intake necessary to maintain a positive balance, *i.e.*, retention; or, it may mean the intake necessary for the "most efficient" utilization, *i.e.*, the greatest percentage retention. In survey studies, calcium requirement may mean the average intake under which no signs of calcium deficiency can be found by roentgenographic study or medical examination procedures. In animal experimentation, the calcium requirement may mean the intake which produces proper mineralization of the skeleton or which may enhance vitality and longevity.

In experimental studies with animals or with human beings, certain factors restrict the interpretation of the results. Investigations with animals permit much greater freedom in the selection and control of the subjects and the procedures used, but the accuracy of any figures on the requirements of man which are obtained by extrapolation of results with animals is always debatable until the data are confirmed with human subjects. In experimental work with human subjects many more factors limit the conclusions which can justifiably be drawn. With man, the most complex of all living creatures, wider individual variations occur as the result of extremely wide ranges in inherited and acquired characteristics. The limitations imposed by the availability and selection of subjects, and by the control and experimental procedures which may be used, further restrict the interpretation of the data obtained unless extreme care has been employed in the selection of subjects and careful planning has preceded the experimental procedures, and unless the investigation is sufficiently broad in scope and continued over an ample time interval.

When the Food and Nutrition Board decided to recommend allowances which would serve as a "tentative goal toward which to aim in planning practical dietaries," the results of experimental studies with both animals and human subjects were evaluated by the members of the Board. In considering the published data the members recognized that data obtained with animals might not closely represent the relative performance of the human body and that data obtained from studies on men, women, children, and infants represented only the performance of the individuals studied, under the conditions of the investigation and to the extent that values were obtained. From the evidence available, allowances were recommended which "were planned to provide not merely the minima sufficient to protect against actual deficiency disease but a fair margin above this to insure good nutrition and protection of all body tissues. Since the actual requirements for these purposes are not known it is recognized that the margins of safety may vary considerably for the different factors."

With the evidence available, the more than fifty qualified persons involved could recommend allowances, acceptable to the entire group, for energy, protein, calcium, iron, and six of the vitamins. In publishing the values, the Board stated that "foods supplying an adequate amount of thiamin, riboflavin, and niacin (nicotinic acid) will tend to supply an adequate amount of the remaining B vitamins. Similarly, diets providing adequate amounts of protein, calcium, and iron will tend to supply other needed minerals, though these are not listed. There is urgent need for continued research on the requirements for all dietary essentials, especially for children."

Fundamentally, the aims of nutrition and dietetics are as follows: to determine the number, chemical properties, and amounts of *all* substances which the human body needs from food in order best to accomplish its destiny; to determine the conditions under which the necessary substances are most effectively used; and to apply this knowledge as quickly, as thoroughly, and as widely as possible. Thus, the problems of the normal requirements of the human body for calcium, or iron, or any of the other essentials are directed toward determining the kinds and amounts of various foods which, together, will provide a dietary which meets the chemical needs of the body.

Studies carried out in this laboratory with normal children during the past 12 years (3) demonstrate the adequacy of the N.R.C. recommended allowances of calories, protein, calcium, and iron; support the belief expressed by the Food and Nutrition Board that diets containing the recommended amounts of protein, calcium, and iron will tend to supply other needed minerals; and also indicate the magnitude of other chemical needs of children 4 to 12 years old. The average daily intakes of 19 separate dietary factors by children, ages 5, 8, and 11 years, are shown in Table 1, with the corresponding N.R.C. recommendations.

The diets given during the investigation supplied average numbers of calories equivalent to, or slightly above, the recommended allowances. The foods provided protein in excess of the recommended allowance, slightly less than the recommended amounts of iron, and approximately four times the allowance of copper. Calcium was provided above the recommendation at one age level and below at the other two ages. The foods provided considerably more than the recommended allowances of vitamins.

The children who participated in the studies were

[1] Received for publication May 3, 1944.

normal in height, weight, physique, skeletal development, and habits. During the studies they lived in their accustomed environment and under conditions little changed by the investigative regime, although the experimental periods were as long as 8 consecutive months. Diets given the children during the 600 balance studies consisted of foods in common use by American housewives.[2] The methods of combining the foods and the preparation and serving were comparable to those used in accepted dietetic practice.

TABLE 1

*Nutriments provided by food intakes of children 5, 8 and 11 years of age**

	5 YR.		8 YR.		11 YR.	
	Intake	Recommended †	Intake	Recommended †	Intake	Recommended †
Body weight (kg.)	18.74		26.16		35.75	
Recumbent length (cm.)	111.0		129.7		138.3	
Heat of combustion (cal.)‡	1720	1600	2180	2000	2500	2500
Protein (gm.)§	61	50	72	60	83	70
Carbohydrate (gm.)	191		240		261	
Fat (gm.)	67		91		113	
Calcium (mg.)	867	1000	1130	1000	947	1200
Magnesium (mg.)	284		316		304	
Sodium (mg.)	2101		2471		3013	
Potassium (mg.)	2574		2955		3487	
Phosphorus (mg.)	1152		1416		1501	
Chlorine (mg.)	3324		3826		4359	
Sulfur (mg.)	679		808		999	
Total minerals (meq.)						
Positive	224		266		293	
Negative	203		241		272	
Complex carbohydrates (gm.)	5.8		6.3		7.0	
Iron (mg.)	7.8	8	8.5	10	12.0	12
Copper (mg.)			4.9	1.3	5.2	1.8
Manganese (mg.)			2.1		2.2	
Nickel (mg.)			1.1		1.2	
Zinc (mg.)			15.4		16.2	

* The intakes given are averages from *Nutrition and Chemical Growth in Childhood* (3).

† Food and Nutrition Board, National Research Council (2).

‡ The approximate distribution of the calories was: 15% from protein, 40% from fat, and 45% from carbohydrate.

§ Sixty-five per cent of the protein was from animal sources; 35%, of vegetable origin. The diet containing 83 gm. protein contained the following estimated amounts of amino acids, in grams: cystine, 0.94; methionine, 2.35; arginine, 4.26; histidine, 1.41; lysine, 4.16; tyrosine, 3.46; tryptophan, 0.83; phenylalanine, 3.78; threonine, 2.87; valine, 2.83; leucine, 8.65; isoleucine, 2.77.

By means of diets composed of natural foods in common use, and under living conditions as nearly normal as it is possible to maintain, the children studied demonstrated in several ways that the chemical needs of their bodies were met, judged by the following criteria: 1. Their appetites were satisfied under normal conditions of activity. 2. Their gains in length, weight and other dimensions (anthropometric measurements) were consistent with accepted standards. 3. Their skeletal structures equalled or exceeded the rate of maturation which would be expected of normal children of comparable ages. 4. By all the criteria of pediatric examination the children were normal at the start of the studies, continued to be normal throughout the studies, and showed improvement in nutritional status during the studies. The children retained the average amounts of nutriments given in Table 2, from the average intakes, in Table 1.

[2]Apple, banana, beef, white and whole wheat bread, celery, American cheese, honey, egg, lettuce, milk, orange juice, potato, shredded wheat, tomato juice, butter, peas, salt, gelatin, cabbage, carrot, peanut butter, Graham cracker, corn flakes, sugar, spinach.

TABLE 2

Average daily retentions by children 5, 8 and 11 years of age from intakes in Table 1

	AGE: 5 YR.		AGE: 8 YR.		AGE: 11 YR.	
	daily	per kg.*	daily	per kg.*	daily	per kg.*
Physiological fuel value (cal.)†	1582	84.9	2010	76.6	2297	64.2
Protein (gm.)	3.8	0.20	3.9	0.15	5.1	0.14
Carbohydrate (gm.)	185	9.9	232	8.9	253	7.1
Fat (gm.)	65	3.5	88	3.4	110	3.1
Calcium (mg.)	172	8.9	169	6.6	162	4.5
Magnesium (mg.)	55	2.8	58	2.2	26	0.7
Sodium (mg.)	219	11.7	287	11.0	217	6.1
Potassium (mg.)	187	10.0	252	9.6	284	7.9
Phosphorus (mg.)	162	8.6	191	7.4	122	3.4
Chlorine (mg.)	252	13.4	340	13.0	103	2.9
Sulfur (mg.)	68	3.6	59	2.3	94	2.6
Total minerals (meq.)						
Positive	27	1.4	32	1.2	27	0.8
Negative	21	1.1	24	0.9	16	0.4
Complex carbohydrates (gm.)	2.2	0.12	3.2	0.12	4.3	0.12
Iron (mg.)	0.6	0.04	1.5	0.06	3.0	0.08
Copper (mg.)			2.7	0.10	3.1	0.08
Manganese (mg.)			<0.01		0.03	0.001
Nickel (mg.)			0.6	0.02	0.7	0.02
Zinc (mg.)			4.9	0.18	4.1	0.12

* Per kilogram body weight.

† Heat of combustion of intake, minus heat of combustion of urine and feces.

CONCLUSIONS

In evaluating a dietary for practical use the final criterion is whether the foods supply the chemical needs of the body, simultaneously and continuously. In recommending allowances of some specific nutriments "to serve as a guide for planning adequate nutrition for the civilian population of the United States" the Food and Nutrition Board of the National Research Council established tentative requirements for diets which may be expected to maintain health, and in children, growth. Experimental data subsequently published support the adequacy of the recommended allowances of calories, calcium, and iron for children 4 to 12 years old. The diets of the subjects of the studies on which this conclusion is based, contained larger amounts of protein than those recommended, but these protein intakes provided nitrogen well in excess of the retentions and it is probable, therefore, that the nitrogen and amino acid requirements of the children would have been met by the recommended allowance, especially since the nutritional status of the children was excellent. It is possible that children of less nutritional stability, even though they manifest no detectable signs of ill health, might be benefited by higher intakes of amino acids which would be provided either by consuming larger amounts of protein than were recommended or by securing the greater part of the protein from animal sources. The data indicate that the recommended allowance of 0.05 mg. copper per kilogram body weight for children may be too low, for with intakes of about four

times that amount the retentions actually were as large as this recommended allowance for copper. However, whether retentions of this amount of copper are essential to health and growth is not known.

By five types of criteria the diets given during the studies met the objectives of the Food and Nutrition Board in establishing the recommended allowances. It is reasonable, as the Board stated, that diets providing adequate amounts of the specific nutriments for which allowances were recommended will tend to supply other needed substances. This is especially true if the diets are composed entirely of commonly used fresh and stored foods and it would seem that such diets would supply the other needed substances in amounts which would provide for health and growth. Thus, the data given for intakes of elements other than those included in the recommended allowances do not represent minimal requirements for the prevention of deficiency but may approximate the general requirements of a dietary which provides adequately for the health and growth of school children. These experimental results which have become available since the recommended allowances were prepared, support the accuracy of those recommendations and indicate possible directions for expanding them so that the requirements for health and growth may be more clearly defined.

REFERENCES

(1) ROBERTS, L. J.: Scientific basis for the recommended dietary allowances. New York State J. Med. 44: 59, 1944.
(2) Recommended Dietary Allowances. Washington, D. C.: National Research Council, Reprint and Circular Series No. 115, Jan. 1943.
(3) MACY, I. G.: Nutrition and Chemical Growth in Childhood. Vol. I, Evaluation. Springfield, Illinois: Charles C Thomas, 1942.

Pemmican

These are days for the military application of such dietetic knowledge as we may gather from any source. Explorers have had little experience with canned and salted foods, since we have found them too heavy for our transportation facilities. We have relied on dehydration, which has given us material savings in bulk as well as in weight. The basic reason for the use of pemmican [As used by North American Indians, pemmican is lean buffalo or venison, sliced, dried, pounded fine, and packed in sacks of hides. Ed.] has been that by drying beef we can reduce six pounds of fresh lean meat to one pound.

Experience has shown that when the diet is exclusively meat you can safely and efficiently derive 80% of your calories from fat, some think 85%. This means, in effect, that without loss of caloric value you can reduce three pounds of fresh lean beef and half a pound of fat to one pound of the dehydrated product, with a corresponding shrinkage in bulk, and with such qualities of wholesome preservability that, without salting, canning or any other extraneous method, the product will keep unspoiled for months, for years, and likely for centuries.

Few men, if any, ever used pemmican more effectively than Rear Admiral Robert E. Peary. In 1917 he wrote: "Of all foods that I am acquainted with, pemmican is the only one that, under appropriate conditions, a man can eat twice a day for 365 days in a year and have the last mouthful taste as good as the first. And it is the most satisfying food I know. I recall innumerable marches in bitter temperatures when men and dogs had been worked to the limit and I reached the place for camp feeling as if I could eat my weight of anything. When the pemmican ration was dealt out, and I saw my little half-pound lump, about as large as the bottom third of an ordinary drinking-glass, I have often felt a sullen rage that life should contain such situations. By the time I had finished the last morsel I would not have walked round the completed igloo for anything or everything that the St. Regis, the Blackstone, or the Palace Hotel could have put before me."

The standard pemmican of the fur traders and early explorers was unflavored with anything, even salt; it is tasteless to most when they first try it. A passion for it comes from long use.

We have noted that pemmican was first reported from the Southwestern United States where midsummer temperatures run to 120° in the shade. Temperatures at 105° in the shade are reported now and then in the "heart of the pemmican country," the Red River valley of North Dakota and Manitoba. Being especially a travel diet, and since most journeys of the fur trade were made in summer, pemmican was a customary hot-weather food in those times; the idea that it is particularly suited to cold weather is a recent development.

It is not definitely known whether pemmican is an antiscorbutic, if made in the Indian way of sun-dried and wind-dried raw meat rather than by the recent manufacturer way of cooking the lean before drying it. However, that Indian-type pemmican is an antiscorbutic is made to seem probable through both the records and the opinions of the fur trade. There was frequent and serious scurvy, for instance, at the posts on Hudson Bay, where salted meat was used, but no scurvy at the posts inland from the Bay, where dried meat and pemmican took the place of the salted provisions.

Under certain conditions it can be of material advantage that an exclusive pemmican diet is one of such small residue that a bowel movement does not occur more than once every five to seven days. This involves no discomfort, for there can be no gas in the intestine as long as you confine yourself to lean and fat. The only difficulty would be psychological. For aviators, an exclusive pemmican diet, or any exclusive meat diet, has some advantage in that the absence of gas from the intestinal tract prevents discomfort that is felt on mixed diets from gas expansion when at great heights.

Several physiologists have written that we do not at present possess the knowledge to say whether pemmican, deriving 80% or more of calories from fat, requires more or less water than, for instance, an Army K ration.

Our discussion has been based upon "true" pemmican, the sort used as everyday fare by Indians on the war path, by traders and explorers. There was from the first another pemmican—called holiday, special or berry pemmican—which was flavored with dried berries and used on feast occasions, like our cake. This has seldom been an important element in the provisions of what were expected to be long and hard journeys.

If used by the Army, pemmican should probably be made up like eating chocolate in slabs creased so as to break off in small squares. Or the pemmican might be in sausages, like the German *Erbswurst* or our hot dogs. Most people find, when getting used to pemmican, that it is better to eat frequently and only when one feels like it, rather than to have set meals. There must be great care to avoid overeating, for a hungry man used to bulky food is likely to gobble down much more than what Peary describes as a lump the size of one third of a water tumbler. The risk is less if you munch uncooked pemmican than if you cook it.

If our Army used pemmican, we could reduce by a third or half the bulk of the meat element in a combination ration; with its nearly or quite exclusive use, for certain purposes, we could reduce by a third or half the total weight and bulk of present special emergency or survival rations—such, for instance, as Army ration K. And we would have, from the start, a food which, in heat or cold, in moist or dry, is not experimental; an ancient Indian food that has been proved out by thousands of white users through more than a hundred years.—*Excerpts from an article by Vilhjalmur Stefansson in The Military Surgeon, August 1944.*

A PLAN FOR ADEQUATE FEEDING IN URBAN, LOW-INCOME GROUPS[1]

FRANCES HEMPHILL, M.S., AND JET C. WINTERS, Ph.D.

Home Economics Department, University of Texas, Austin

THE present study, based on a series of menus planned specifically for urban, low-income groups, is an extension of a 1942 study of the nutritive value of certain low-cost food mixtures, made in this laboratory and reported in 1943 (1). In brief, the study included menus for 4 weeks; a market order with calculated nutritive, money, and ration point values; assay values for calorie, protein, calcium, phosphorus, thiamin, riboflavin, pantothenic acid, and niacin content of the meals; comparison of the assayed and calculated values; and data on vitamin losses incurred in preparing the menus.

PRELIMINARY PROCEDURES

The first step in the investigation was to prepare a list of foods that furnished good nutritive value at a low cost and that were representative of the various food groups emphasized as important for an adequate diet. The cheapest items in every food group were selected. Other points considered were the food habits of the families for whom the diets were proposed and the availability of the various commodities throughout the year. With the advent of rationing certain changes were necessary in the quantities of some of the foods originally chosen.

Prices of food changed so rapidly that it was impossible to obtain a price quotation that applied for any great length of time, therefore those used in the tables were arrived at by getting quotations over a period of one week in the fall of 1942 and over a period of 3 weeks in February 1943 from 4 stores in Austin. The average of these prices was used. As finally worked out, the cost of the diet was 22.5 cents per person per day. A tentative market list for one person for 4 weeks was compiled and cost, nutritive, and ration point values calculated. [In view of changing conditions in this respect, these ration point values have been omitted. Ed.]

Preliminary menus were planned, utilizing the food items on the market list (Table 1). Special attention was given to making these menus appetizing and varied and at the same time easily prepared. In planning menus, due consideration was given to the culinary equipment usually found in kitchens of low-income families. While the market order was worked out in line with the nutritive needs of a moderately active woman, the menus were planned so that they could easily be adjusted to the needs of the child or the working man. Because of rationing and high prices, meat was served on an average of four times a week and desserts were kept at a minimum.

A work sheet was prepared with columns for each food on the market list. Standard recipes used in the menus were collected and from these the exact amount of each ingredient needed for one serving was determined and noted in the proper column on the work sheet. The necessary amounts of many of the foods which did not require a recipe were determined, and also noted in the proper column. Each column was then totaled and the market list changed to agree with the exact amounts required by the menus. Finally, this market order was checked for cost, ration point, and nutritive value. The market order with calculations, except for ration points, is given in Table 2.

ASSAY METHODS

Preparation of Samples. Two equal portions of each item on the menu for a day were weighed and one lot was placed in a jar for assaying in the raw state. The other lot was prepared for serving, particular attention being given to the preservation of vitamin content. All vegetables were cooked in small amounts of water in a covered vessel for the shortest period of time consistent with palatability and the cooking water was utilized as much as possible. Care was taken to prevent undue loss of food during preparation processes. Evaporated milk, used entirely for cooking, was sometimes mixed with fresh milk for drinking. Fresh milk intake was limited to one cup per day.

In order to get a representative sample for vitamin assays, the solid foods were run through a meat chopper and blended, together with the liquid portion and washings from the containers and chopper, in a Waring Blendor. The homogenized mixture was made to a definite volume and eight 50-ml. aliquots were taken by pipette. Since solid particles tended to settle out of the mixture, it was kept in constant agitation during sampling. The eight aliquots were then blended for 2 min. and aliquots again taken for assaying.

For the dry weight determinations an aliquot equivalent to .01 of the total was dried in a small, weighed, evaporating dish at 70°C. in an electric oven for 24 hr.

For the microbiological assays of riboflavin, pantothenic acid, and niacin, a 10-ml. aliquot was mixed with 40 ml. acetic acid-sodium acetate (0.5 per cent) buffer, *p*H 4.5, and 20 mg. each of clarase and papain (approximately 2 per cent by weight). The enzyme autolysis was allowed to proceed 24 hr. under benzene at 37°C. The sample was then steamed 30 min. in an autoclave to remove the benzene and stop the enzymatic action, then centrifuged, plugged, and steamed 10 min. and stored in the refrigerator until time for use.

The assay procedures were the same as those used in the laboratory of R. J. Williams and his associates (2). The yeast fermentation method (3) was used for the determination of thiamin.

For mineral analysis, .02 of the original sample was taken from each day's dietary and stored in a sterile flask. At the end of a 7-day period the compounded samples were homogenized in a Waring Blendor and an aliquot equivalent to .05 of the combined volumes of the period was taken for digestion. A similar aliquot was dried 24 hr. in an electric oven at 70°C. for nitrogen determinations.

The official A.O.A.C. method was used for calcium determinations. Phosphorus was determined colorimetrically by the method described by Koenig and Johnson (4), using a Fisher electrophotometer instead of the spectrophotometer. The standard Kjeldahl method for the determination of nitrogen was employed to determine the protein content of the diets.

Calorie values were calculated from the dry weights by multiplying the total dry weight of each day's diet by 5. This figure had been previously established by bomb-calorimeter determination on 34 samples of food mixtures.

RESULTS AND DISCUSSION

One aim of this study was to design a series of menus low in cost, palatable, satisfying, and nutritionally adequate as shown by assay. It would have been desirable to have had the diets actually consumed by a low-income group in order to note their reactions with respect to the palatability of the food. This was not possible, but each menu was judged, after preparation, by at least two

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members of the Home Economics Department. Minor changes were made when deemed desirable.

Adequacy of Diets. Vitamin assays and calorie estimations were made on each day's diet. Mineral and protein assays were made on a week's sample. The weekly averages for all nutrients determined are presented in Table 3, as well as the average for the month which is computed from the weekly averages. All data are given on both raw and cooked samples.

allowances showed that the calories and riboflavin were slightly below and niacin considerably below the recommended amounts, while the protein, calcium, and thiamin were well above. Pantothenic acid was considerably below the amount suggested (5) as representing adequacy (10 mg. per day).

It would seem that a diet of natural foodstuffs, containing sufficient amounts of thiamin and riboflavin, should also contain enough niacin. As explained above,

TABLE 1

*First week's menus**

BREAKFAST	LUNCH	DINNER
Half grapefruit Corn meal hot cakes, molasses Coffee	Braised short ribs, gravy Sweet potato and raisin casserole Turnip greens Hot biscuit Eggless cake	Peanut butter sandwiches Cabbage slaw Oatmeal cookies Milk
Oatmeal Toast Coffee	Blackeye peas, salt pork Turnips Corn pones Milk	Baked onions stuffed with liver Mashed potatoes Raw carrot strips Hot biscuit, molasses Milk
Cracked wheat with raisins Toast Coffee	Fried mush, molasses Slice of bacon Beet greens Baked sweet potato Milk	Baked beans Creamed onions Cabbage and carrot salad Boston brown bread Milk
Oatmeal "hurry-ups," molasses Coffee	Tomato soup Baked bean sandwich (Boston brown bread) Milk	Fried salt jowl, cream gravy Mashed potatoes, rutabagas Beet and onion salad Hot biscuit Tapioca cream Milk
Stewed prunes Cracked wheat Coffee	Escalloped potatoes, onions Cabbage slaw Toasted biscuit Molasses cookies	Tamale pie Pinto beans Carrots, turnips Whole wheat muffins Milk
Oatmeal Toast Coffee	Pinto beans, tomato sauce Glazed onions Corn pone Milk	Fish baked in milk French-fried potatoes, rutabagas Whole wheat bread Cereal pudding Milk
Fried salt jowl, gravy Oatmeal Hot biscuit, molasses Coffee	Peanut butter soup Baked sweet potato Beet greens Corn bread	Bean casserole Beet and onion salad Corn muffins Molasses cookies Milk

* Enough milk and sugar were allowed to serve with cereal and coffee, and enough margarine for bread. Where no method of vegetable preparation is specified, the vegetable was cooked in boiling water and seasoned with margarine.

Table 4 gives data for comparing the assay results with the calculated results (Table 2). Assay results from raw samples were used since calculations were made on the raw basis. The average assay values for riboflavin and phosphorus were somewhat lower than the calculated values, while the values for the other nutrients were somewhat higher, with the exception of niacin, for which the assay value was considerably lower (23 per cent) than the calculated. The large difference in the calculated and assay value for niacin may possibly be due to the fact that the niacin value of foods at present is not so well established as that of other food factors. On the whole, the assayed and calculated values agreed fairly well.

Recommended allowances are based on food as actually consumed, so in determining the adequacy of the menus under consideration, the assay results from the cooked samples were used (Table 5). Comparison of the nutritive value of the cooked diet with the recommended

niacin values are not so well established as some of the other vitamin values and perhaps the same is true in regard to requirements. It is, however, possible that the proposed menus are actually inadequate for niacin. Improvement in this respect could be brought about by using less corn meal and more enriched flour or bread.

Table 6 gives the average percentage weekly losses in nutritive value, determined by a comparison of the average assay figures on the raw and cooked samples. Since there is no destruction of calories or protein in food preparation, losses in these items represent unrecovered food in the cooked sample. The losses were not large, the average being 10.9 per cent for calories (dry weight) and 13 per cent for protein. The data indicate no loss in preparation except for thiamin, since this is the only nutrient with a greater percentage loss than calories and protein. Apparent gains in minerals are probably due

TABLE 2

*Market order for entire period (4 weeks) with calculated nutritive content and cost**

	AMOUNT		COST**	PROTEIN	Ca	P	Fe	VITAMIN A	THIAMIN	ASCORBIC ACID	RIBO-FLAVIN	NIACIN
	lb.	*Cal.*		*gm.*	*gm.*	*gm.*	*mg.*	*I. U.*	*mg.*	*mg.*	*mg.*	*mg.*
Hamburger	.50	360	$.125	55	.03	4.63	8.35	79	.52		.59	17.84
Brisket roast	.166	145	.04	16	.01	.15	2.28	15	.17		.19	4.85
Short ribs	.40	304	.09	38	.02	.37	5.46	36	.41		.47	12.62
Bologna	.125	366	.025	21	.003	.06	3.19					
Pig liver	.666	286	.153	61	.033	1.11	24.76	81540	1.57	36	8.15	68.85
Heart	.20	86	.046	15	.017	.16	2.18	182	.61	4	.82	6.91
Kidney	.20	113	.046	15	.009	.16	3.64	910	.24	7	1.91	6.68
Brains	.20	112	.04	8	.007	.16	5.64		.23	12	.23	4.46
Salt jowl	1.00	2814	.18	47	.03	.49	6.81		.11		.45	19.97
Fish, white	.50	160	.09	38	.04	.45	2.27		.03			8.71
Cheese	.166	330	.053	21	.70	.53	.98	2277	.03		.40	
Beans	2.00	3130	.16	204	1.34	4.20	95.50		4.63		2.95	20.88
Potatoes	5.00	1928	.20	45	.29	1.20	23.15	681	2.27	227	.91	26.78
Sweet potatoes	4.00	2251	.32	32	.36	.81	13.98	63560	1.63	363	1.36	23.42
Carrots	2.33	500	.10	13	.37	.27	7.00	56400	1.54	65	1.28	16.24
Beets	1.00	208	.05	7	.12	.19	3.90	400	.43	23	.57	.78
Onions	3.00	656	.15	22	.56	.64	6.50		.41	204	.68	1.36
Turnips	3.00	525	.12	15	.76	.64	6.80	181	.41	408	.45	
Tomatoes	1.25	130	.12	5	.04	.12	2.27	5112	.52	102	.28	3.08
Greens	2.00	336	.14	26	3.15	.44	31.60	159000	.55	750	3.12	5.11
Turnip	(500 gm.)											
Beet	(350 gm.)											
Carrot	(58 gm.)											
Cabbage	2.00	264	.06	13	.41	.31	3.90	728	1.27	364	1.23	1.72
Grapefruit	2.00	400	.06	10	.14	.16	2.56	180	.64	320	.09	
Prunes	.50	580	.06	4	.13	.19	6.46	5600	.51	18	1.47	
Raisins	.50	663	.07	5	.11	.28	6.71	117	.34		.27	1.43
Bananas (2)	(160 gm.)	160	.06	2	.012	.04	1.01	560	.12	16	.12	.97
Sauerkraut	.25	30	.02	2	.04	.01	3.76	30	.03	6.08		
Peanut butter	1.00	2740	.20	132	.30	1.80	9.08	1638	2.72		2.26	84.44
Eggs (1 doz.)	(600 gm.)	840	.33	75	.37	1.34	18.78	9000	.90		2.10	.51
Flour												
White (enriched)	4.00	6400	.16	204	.24	1.83	23.00		7.30		.73	16.34
Whole wheat	1.00	1630	.06	62	.16	1.39	15.89		2.27		.91	18.16
Oatmeal	1.50	2752	.075	100	.43	2.62	3.27		3.67		.68	4.08
Cracked wheat	.50	820	.035	25	.12	.85	11.35	57	1.50		.50	9.08
Corn meal	5.00	8104	.15	205	.36	3.45	20.40	2700	6.80		1.82	13.62
Bread												
White (enriched)	1.50	1780	.10	62	.33	.66	12.00		1.68		.48	13.62
Whole wheat	1.00	1110	.08	44	.18	.68	7.59		1.81		.45	13.07
Spaghetti	.25	438	.025	16	.03	.16	1.37		.03			2.39
Margarine	1.50	5240	.255	15	.21		3.10	29082				
Lard	1.00	4100	.15									
Molasses	2.00	2600	.14	22	.25	.29	71.00					
Sugar	2.00	3632	.12									
Milk												
Evaporated	7.56	4839	.75	230	8.24	6.86	13.73	13728	2.75	141	11.33	6.77
Fresh	15.00	4648	.98	221	7.93	6.25	13.44	15120	4.37		16.13	6.72
Coffee	.50		.12									
Miscellaneous			.10									
Total		68510	6.308	2153	30.15	45.95	503.29	468913	55.02	3066	65.38	441.46
Av. per day		2446	.225	77	1.07	1.64	18.00	16750	1.97	109	2.33	15.76
Standard for moderately active woman		2500		60	.80		12.00	5000	1.50	70	2.20	15.0

* Data based on: Munsell, H. E.: The vitamin content of common foods, Milbank Mem. Fund Quart. 21: 102, 1943. McVicar, R. W., and Berryman, G. H.: Nicotinic acid in foods, J. Nutrition 24: 235, 1942. Russell, W. C., Taylor, M. W., and Beuk, J. F.: The nicotinic acid content of common fruits and vegetables as prepared for human consumption, J. Nutrition 25: 275, 1943. Sherman, H. C., and Lanford, C. S.: Essentials of Nutrition. New York: The Macmillan Company, 1940. Waisman, H. A., and Elvehjem, C. A.: The Vitamin Content of Meat. Minneapolis: Burgess Publishing Company, 1941.

** Average of prices for one week in fall of 1942 and 3 weeks in February 1943.

to errors in collection of samples. The determinations were repeated several times.

TABLE 3

Nutritive content of the raw and cooked food mixtures (weekly averages)

WEEK	CALORIES		PROTEIN		CALCIUM		PHOSPHORUS		THIAMIN		RIBOFLAVIN		NIACIN		PANTOTHENIC ACID	
	raw	cooked	raw	cooked	raw	cooked	raw	cooked	raw	cooked	raw	cooked	raw	cooked	raw	cooked
	per day		*gm./day*		*gm./day*		*gm./day*		*mg./day*		*mg./day*		*mg./day*		*mg./day*	
1	2715	2355	86	71	1.20	1.12	1.77	1.25	2.19	1.85	2.19	2.08	13.15	12.07	8.46	7.36
2	2550	2230	91	80	1.29	1.29	1.43	1.46	2.24	1.75	2.26	2.10	10.98	10.63	8.93	8.42
3	2755	2515	85	75	1.17	1.26	1.38	1.54	2.05	1.52	2.53	2.36	12.10	11.16	7.54	6.89
4	2755	2500	95	84	1.07	1.28	1.60	1.48	2.17	1.87	2.20	1.96	11.83	11.74	6.75	6.09
Average....	2695	2400	89	77	1.19	1.23	1.54	1.43	2.16	1.75	2.29	2.12	12.01	11.40	7.92	7.19

TABLE 4

Nutritive content of diet as calculated and as assayed

DIET	CALORIES	PROTEIN	CALCIUM	PHOSPHORUS	THIAMIN	RIBOFLAVIN	NIACIN	PANTOTHENIC ACID
	per day	*gm./day*	*gm./day*	*gm./day*	*mg./day*	*mg./day*	*mg./day*	*mg./day*
Calculated.....	2446	77	1.07	1.64	1.97	2.33	15.76	
Assayed (raw).....	2695	89	1.19	1.54	2.16	2.29	12.01	7.92
Percentage variation.....	10	15	11	−7	9	−1	−23	

TABLE 5

Nutritive adequacy of diet as determined from assay figures

(Based on allowances for moderately active woman)

DIET	CALORIES	PROTEIN	CALCIUM	PHOSPHORUS	THIAMIN	RIBOFLAVIN	NIACIN	PANTOTHENIC ACID
	per day	*gm./day*	*gm./day*	*gm./day*	*mg./day*	*mg./day*	*mg./day*	*mg./day*
Recommended.....	2500	60	.80		1.50	2.20	15.00	(10.00)
Assayed (cooked).....	2400	77	1.23	1.48	1.75	2.12	11.40	7.19
Percentage variation.....	−4	28	50		16	−4	−24	−28

TABLE 6

Losses in nutritive value during food preparation

WEEK	CALORIES	PROTEIN	CALCIUM	PHOSPHORUS	THIAMIN	RIBOFLAVIN	NIACIN	PANTOTHENIC ACID
	%	%	%	%	%	%	%	%
1	13.2	17	6	29	15.5	5.0	8.2	11.9
2	12.5	12	0	+2	21.9	7.1	3.2	5.7
3	8.7	12	+8	+11	26.0	6.7	7.8	8.5
4	9.0	12	+20	7.5	14.0	10.9	1.0	9.8
Average	10.9	13	+3	7	20.0	7.4	5.0	9.2

SUMMARY AND CONCLUSIONS

In an attempt to aid in the food problems of the urban, low-income group, suitable menus for 4 weeks were worked out, prepared and assayed. Foods that furnish good nutritive value at low cost were utilized, having been selected from the various food groups emphasized as necessary for an adequate diet. The cost of the diet, as calculated from average prices in Austin in 1942–43, was 22.5 cents per person per day. In writing the menus an effort was made to meet the criteria of palatability, appetite appeal and ease of preparation, as well as adequacy. Rationing restrictions were complied with and only readily available foods used.

A check on the calculated nutritive value, which indicated adequacy in all items, was made by assaying each day's menus for certain nutrients. The average assay value for riboflavin and phosphorus was somewhat below, and that for niacin considerably below, the calculated values. Other nutrients were 10 to 15 per cent above calculated values. By comparing assay values with recommended allowances, it was shown that the menus, while slightly low in calories and riboflavin, were significantly low only in niacin. They were also low in pantothenic acid if the suggested allowance of 10 mg. per day (5) is valid. It is possible that changes should be made in the diet to increase the niacin content. This could be accomplished by using less corn meal and more enriched flour and bread, which would involve only slight increase in cost.

An attempt was made to obtain data on average losses of nutrients resulting from food preparation by assaying a food mixture representative of each of the 28 days' menus in both the raw and cooked state. The results indicated little loss in vitamins except for thiamin. Mineral, protein, and calorie losses were also shown to be small.

REFERENCES

(1) Hemphill, F., Koenig, R. A., and Winters, J. C.: Nutritive adequacy of certain low-cost food mixtures. J. Nutrition 25: 285, 1943.

(2) Studies on the Vitamin Content of Tissues, I. Univ. of Texas Pub. 4137, 1941.

(3) Schultz, A. S., Atkin, L., and Frey, C. N.: Determination of vitamin B_1 by yeast fermentation method. Ind. Eng. Chem. Anal. Ed. 14: 35, 1942.

(4) Koenig, R. A., and Johnson, C. R.: Colorimetric determination of phosphorus in biological materials. Ind. Eng. Chem. Anal. Ed. 14: 155, 1942.

(5) Williams, R. J.: The approximate vitamin requirements of human beings. J. A. M. A. 119: 1, 1942.

Editorial

THE NUTRITION FOUNDATION

In his report to the trustees of the Foundation, Dr. Charles Glen King, as Scientific Director, states that from May 1942 (when the initial grants were made) to June 30, 1944, the Foundation appropriated $530,040 for studies in the science of nutrition, distributed under the following: human requirements of specific nutrients, the origin and functions of individual nutrients in living cells, maternal and infant nutrition, public health problems in nutrition, education and professional training, and nutrition studies related directly to the war.

When the program was being organized, it was agreed that the human protein requirement called for much needed research. "Which of the twenty-three or more amino acids (the so-called 'building blocks') in the proteins from meat, eggs, milk, legumes, and cereals are *essential* for the nutritional needs of the human body? The pattern of requirements was reasonably clear for albino rats, but almost nothing had been established for man—and the world-wide demand for proteins of high quality, as supplied by milk, meat, and eggs, was far greater than the apparent supply."

Early qualitative work, now nearly completed, is being followed by quantitative studies to find how much of each protein fragment is needed per day. From the studies already finished, it is clear that at least eight of the ten amino acids required by rats are also required by man. The war accentuated, too, the need for more data on the human vitamin requirements, and a study of these, with a large group of carefully selected prison inmates serving as subjects on a voluntary basis, is now under way. Another is specifically directed to the human requirement of riboflavin, still others are concerned with calcium, iron, and fat utilization, and biotin balance studies.

Dr. King points out that in order to understand and apply the science of nutrition one must know what each nutrient does inside the body, as is the case with the vitamins and the trace elements now known to control definite chemical reactions that sustain life. Therefore, a long-time study of the steps involved in the biological conversion of sugars to fats is now being made, also basic studies of carbohydrate metabolism. It is recognized that through short intervals of time the most crucial nutrient requirement for maintenance of physical and mental efficiency clearly is the energy need, but through periods of weeks, months, or years, impairment may result from an inadequacy of any one of several dozen individual nutrients that are common to a wide range of foodstuffs. Unfortunately, appetite has been found to be less reliable as an index of need for these other factors, in the light even of its faulty regulation of caloric intake.

Other studies undertaken by the Foundation, the progress of which we shall watch with interest, include the synthesis and utilization of liver protein, attempts to identify the newer vitamins in the B complex, the role of niacin, the development of more satisfactory methods of diagnosing deficiency diseases, vitamin A intake in relation to bodily store and well-being at different ages, the role of vitamin A in normal and diseased tissues, and the capacity of liver cells to destroy cancer-stimulating compounds.

At a conference on nutrition in relation to public health under the auspices of the Foundation, the need for further development of techniques for the evaluation of nutritional status was emphasized, specifically the need to provide adequate control groups for reference and the value of cooperative studies by physicians, biochemists, nutritionists, and persons experienced in handling data from clinical studies.

Among other studies of more immediate interest, are those related to the war emergency, such as: the retention of vitamins along with satisfactory flavor and color in dehydrated vegetables, fruits, milk, eggs and meats; nutritive losses in representative dehydrated meats; maintaining working efficiency under environmental conditions of interest to the armed forces; nutrition in relation to aviation; and a number of studies of food composition and losses in nutritive value during processing or large-scale cooking.

Of very great interest to dietitians is a grant to Harvard University which will enable a few outstanding physicians to pursue post-doctorate training in medical nutrition, and that a similar opportunity will be available to a small number of dietitians of special promise.

Another activity, one that unquestionably has met a real need, in a field seemingly well covered, even crowded with scientific and professional publications, is the publication of *Nutrition Reviews*, edited by Dr. Fredrick J. Stare, and undertaken "to enable professional people who work directly with the public to keep abreast of research progress in the science of nutrition by means of an authentic, unbiased, prompt review of the world's scientific literature."

The Foundation's record to date reflects great credit on the representatives of private enterprise whose pooled resources have made the program possible, and on the businesslike skill and executive ability demonstrated by those who have directed it.

THIAMIN OR THIAMINE?

"Several puzzled nutritionists" is the sole identification other than the postmark, Worcester, Massachusetts, on a worried and brief request recently received: to wit, which is correct—thiamin or thiamine? In reply, one might say, it's "Sometimes this, and sometimes that." Even a cursory review of the literature and standard reference books will show that there is no unanimity of opinion as to which is preferable. The latest edition of Dorland's *American Illustrated Medical Dictionary* gives no clear clue, merely listing thiamin, and thiamine immediately thereafter, in alphabetical order. Despite the swinging over, seemingly, of many to "thiamine," this JOURNAL has clung to the original spelling of this sulfur-containing member of the B complex, once called vitamin B_1, a term still prevailing in England, and later designated as "aneurin" by Jansen,[1] who first isolated the substance and clearly could have been entitled to name it.

The term, aneurin, was objected to on the basis that it implied therapeutic utility—an argument some may recall as having once been used when cevitamic acid was unsuccessfully proposed contra ascorbic. Just why therapeutic utility should not be implied in one instance, yet be acceptable in many another, is not clear to this editorial writer. Evidently, too, some officially revised terms "take" and others do not—niacin for nicotinic acid, for example.

As Williams,[2] who proposed the name, thiamin, has said,

[1] Nature, 140: 267, 1935.

[2] Vitamin B_1 (Thiamin) and Its Use in Medicine. New York: The Macmillan Company, 1938.

thiamin has some advantage over aneurin, in that it does not imply specific connection with nerve function and conforms to the evidence that this vitamin has a function even in organisms which have no nervous system. The term, thiamin, simply conveyed the connotation, sulfur-containing vitamin, the initial syllable being the same as in thioalcohols or sulfur alcohols, the suffix "amin" being taken from vitamin.

Others, however, proposed a terminal "e" since the substance contains an amino group and can therefore be regarded as an amine. Yet one might equally well choose to emphasize several other chemical features of the substance, since it is an alcohol, a thiazole, a pyrimidine, etc. etc., as well as, in a sense, an amine.

For the present, then, it will continue to be "thiamin" in this JOURNAL, as it is currently in *Nutrition Reviews*, *Food Research*, and *Cereal Chemistry*, and a few publications directed to the medical profession.

Current Comment

SOME MODERN CONCEPTS CONCERNING HOSPITAL DIETS[1]

MARIE V. KRAUSE

Nutrition Clinic, New York Hospital

At the 1940 New York meeting of the American Dietetic Association, Dr. Eugene F. Du Bois of the New York Hospital and the Department of Medicine, Cornell University Medical College, speaking on "Fewer and Better Diets," said: "It is fair to say that most hospitals have too many special diets on their official dietary lists. . . . If we can eliminate a large number of worthless special diets the time and money saved can be employed in making the fewer diets better."

At New York Hospital we have attempted to carry out the suggestions and ideas of Dr. Du Bois. The Medical Board appointed a Diet Committee with representatives from the clinical Departments of Medicine, Surgery, Obstetrics, Pediatrics, and Psychiatry, the semiprivate and private services, and the Department of Nutrition. Through the Diet Committee the physicians attached to the hospital have an opportunity to confer as a unit with regard to problems concerning diet. The first work of the committee was to review the hospital's *Handbook of Applied Nutrition*, page by page. As a result certain diets were revised and others eliminated. In addition, the revised edition of the handbook will contain a rationale for each diet, which will be a useful adjunct in teaching medical students, student nurses, and student dietitians. A section will also be devoted to methods of cooking and serving for optimum vitamin retention.

The General House or Adequate Diet is now used whenever possible and also serves as a basis when therapeutic variations are necessary. This diet averages 2500 calories and 85 gm. protein, and includes all other known dietary essentials in excess of the amounts recommended for an adult by the Food and Nutrition Board of the National Research Council. The dietary value is determined by calculating a sample weekly menu in each quarter of the year, or a total of 28 days' menus. Recently, the vitamin content of the General House Diet has been checked by actual analysis in a food research laboratory. These figures will be rechecked from time to time throughout the year in order to determine if any changes occur as a result of seasonal variations.

[1] Presented before the New York State Dietetic Association, New York, May 26, 1944.

The changes in the handbook as authorized by the Diet Committee have resulted in diets which are more palatable and acceptable to the patient, and there has been less waste of food.

A total of 20 of the 70 diets originally listed in the *Handbook of Applied Nutrition* have been eliminated. The remaining 50 diets include the house diets—General, Soft, and Liquid—as well as tube-feeding formulas and surgical routines. Most of these 50 diets have been made more liberal in nutritional value.

In January 1941, 42.2 per cent of the pavilion or ward diets were special diets. In January 1942 these were reduced to 23.1 per cent or approximately one half.

I shall not go into details with regard to all the changes made. The general tendency has been to be as liberal as possible, and the House Soft Diet and Convalescent Ulcer Diet were among the first to receive attention in this respect. Vegetable purées are notoriously unpopular, and patients frequently refuse to eat them. These were omitted from the diets in favor of cooked vegetables of low fiber content. The result has been a more palatable diet and a happier patient who benefits by eating vegetables which he previously refused. At present the number of purées served for luncheon and dinner has been reduced from 70 to 20, and a saving of 200 portions of vegetable per day has been effected since it requires twice as much vegetable by weight when puréed as when served in the usual form. If the average portion cost of a serving of vegetable is 3 cents, a total money saving of $6 per day is also effected. Fine whole grain bread and cereals are also used on these diets, thus increasing the protective dietary factors.

We no longer observe the old rule: no "gas forming vegetables" in the Low-Fat Diet used in gallbladder disease. Clinically, we know that many patients can and do eat cabbage and other "gas forming vegetables" without particular discomfort. We therefore include all fruits and vegetables—both raw and cooked—except those which the individual patient cannot tolerate.

The Low-Salt Diet, which formerly contained 2 gm. salt and 40 gm. protein, and which is often erroneously called the "Salt-Free Diet," now contains 3 gm. salt and 60 gm. protein. This allows for more milk and salt-containing foods in the diet and makes it more acceptable to the patient. Formerly the waste of food by patients on this diet was very high. Chronically ill patients requiring this type of diet, such as cardiac patients and those with acute nephritis, are finicky eaters and everything possible should be done to stimulate their appetites.

The very low protein diet is considered to have little therapeutic benefit beyond a certain point. At present the lowest protein diet ordered in our hospital other than for research purposes, is one containing 60 gm. Since many patients remain on a low-protein or a combination low-protein, low-salt diet for an extended period of time, the diet should be as adequate as possible.

We have eliminated the High-Caloric Diet which included extra amounts of butter, cream, and between-meal nourishment per routine. In its place the General House Diet is served, plus additional calories ordered in steps of 500: for example, the General House Diet plus 500 calories making a total of 3000 calories, or the General House Diet plus 1000 calories making a total of 3500 calories, and so on. The extra calories are added in the form best suited to the individual patient. Men often prefer the additional calories in the form of larger portions of the usual foods; adolescents like between-meal nourishments; while women frequently favor the more concentrated foods such as supplementary cream in milk served as a beverage. The whole plan is to individualize the

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treatment for each patient. Obviously waste will be reduced to a minimum by such means, which are in keeping with the wartime food conservation program.

The High-Vitamin Diet has been replaced by the General House Diet plus a vitamin supplement in capsule form. The vitamin capsules have been devised in line with the stated recommendations of the Food and Nutrition Board of the National Research Council for an average, fairly active man. As a result the diet as served is more palatable and the saving in cost of butter and cream amounts to about 50 per cent.

Too frequently we are content to continue doing what has been done year after year, rather than take time for a critical analysis of our methods. This was certainly true with regard to many of the diets we formerly served. We feel, too, that the more generous the diet, the more certain we can be that the necessary dietary requirements will be met. To serve a good general diet every day, and modify it for therapeutic reasons only when necessary is, we believe, a good basic rule for better nutrition.

HIGH-FAT DIETS IN TREATMENT OF DIABETES[1]

ELMER L. SEVRINGHAUS, M.D.

Medical Division, University of Wisconsin

In the history of diet therapy for diabetes the advantage of high-fat diets became apparent as the source of glycosuria in dietary carbohydrate became recognized. In 1914 Joslin and Allen published their studies which showed, among other things, that the acetone bodies were derived from the fatty acids. Thereupon a strong prejudice was conceived against fats in the diet of the diabetic. Seven years later three epoch-making papers by Newburgh, Woodyatt, and Shaffer appeared almost simultaneously. Newburgh showed that ketosis was not caused by the amount of fat fed, but that the amount of fat metabolized per unit of time was important. Woodyatt made calculations which seemed to show the ability of carbohydrate and protein to facilitate the combustion of fat in quantitatively predictable amounts. Shaffer found an *in vitro* analogue of the ketolytic effect of glucose when subjected to oxidation simultaneously with aceto-acetic acid. The vogue was distinctly in favor of high-fat diets, with the minimum use of carbohydrate and protein which would prevent ketosis and maintain nitrogen equilibrium.

Just after these metabolic studies became known, the discovery of insulin was announced. In the next few years its widespread success led to trials of diets more liberal in carbohydrate, and therefore more restricted in fat. Results were clinically successful. In many cases, but not all, the insulin requirement was greater, but usually the cost was not prohibitive. Those diabetics who could be kept free from ketosis and glycosuria on a low-carbohydrate diet, but who could use a higher allowance of carbohydrate only with insulin, had the choice between the nuisance of hypodermically-injected insulin, or more restricted diets.

The rationalizations of these steps had all been based on the theory, associated chiefly with the name of Knoop, that fatty acids underwent oxidation at the beta-carbon atom, and that from any one molecule of fatty acid there was produced one molecule of aceto-acetic acid. This latter was then thought to be oxidizable only with simultaneous oxidation of glucose or some of its intermediate oxidation products. Witzeman and others later called attention to the probability that alpha-oxidation of fatty acids was also involved, and this theory did not fit. But more important was the demonstration by Stadie and Mackay that from a typical 16-carbon atom fatty acid molecule one obtains 4 molecules of aceto-acetic acid. Furthermore, Stadie showed that aceto-acetic acid is to be considered a normal metabolite of tissues, probably the labile compound by which fatty acid oxidation normally proceeds. And finally, there appears to be a rather constant upper limit of aceto-acetic acid per gram of tissue, per unit of time, which can be oxidized. The presence or absence of oxidizing glucose does not affect this capacity of tissue to oxidize aceto-acetic acid. This is directly comparable to results by Woodyatt, Wilder, and Sansum about 20 years earlier, showing an upper limit to the capacity of tissues to oxidize glucose.

In order to understand how detectable amounts of aceto-acetic acid accumulate in blood or urine, it must be recalled that the living organism persists in liberating energy, that is, in oxidizing metabolites. The most readily used in many ways is glucose, but if there is a deficit in supply of glucose for the purpose, or if the oxidation of glucose is impaired as in diabetes mellitus, other metabolites are drawn into the metabolic mixture without delay. The almost ubiquitous fatty acid molecule is the largest source of energy in this situation. If the total energy liberation from fat exceeds a fixed limit, some of the aceto-acetic acid will accumulate because the tissue has thrown into the fire more fuel than it has capacity to burn. This constitutes ketosis. The prevention of ketosis therefore requires one of two measures: decrease total metabolism or increase the amount of glucose available for oxidation. This furnishes the rational basis for the clinical fact that ketosis in the untreated diabetic indicates almost always that glucose tolerance is so low that maintenance can be achieved only by use of insulin, whereas the absence of ketosis even in the presence of hyperglycemia and glycosuria is a good indication that dietary limitation alone will attain control of the condition. This latter conclusion is more commonly true if the diets used are high in fat, low in carbohydrate.

The objectives in treatment of diabetics include: (1) Freedom from ketosis. (2) Weight maintenance while at the usual occupation. (3) Maintenance of normoglycemic range, to allow regenerated tolerance.

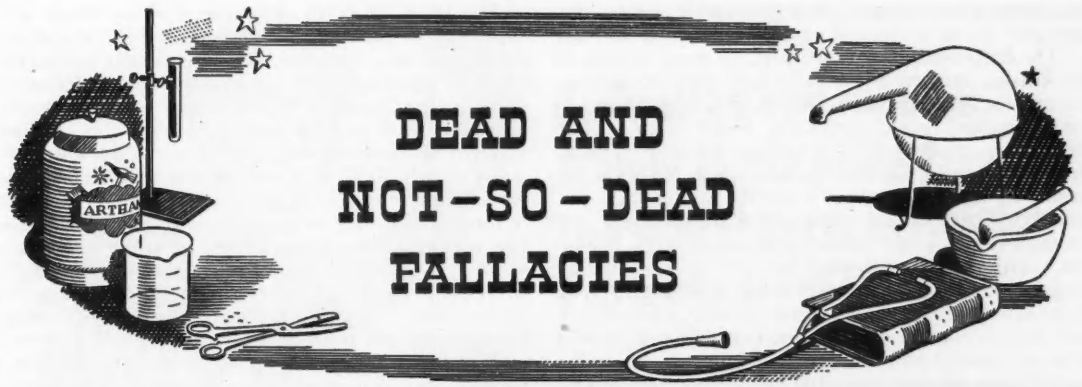
It has been shown by Newburgh that the first is independent of the amount of fat fed. It is now known to depend on the amount of fat metabolized. Therefore one must merely use enough insulin, endogenous or exogenous, to eliminate ketosis.

The second goal is attained by an adequate caloric intake. For this purpose fat is of great value. It has low bulk per calorie and the satiety value is high. Presence of fat in the digesting mixture leads to prolonged absorption of carbohydrate. This, plus the lower total amount of carbohydrate made necessary by the presence of fat, leads to lower demand for insulin. The larger amount of fat decreases the demand for thiamin. The use of high-fat, low-carbohydrate menus reduces the frequency of nocturnal hypoglycemic reactions.

The third objective is important unless the reduced tolerance has been shown to be fixed, and not susceptible of improvement or of loss. Therefore it is urgent that one maintain normoglycemic conditions for major portions of the day. With protamine insulin this becomes difficult in the severe diabetic, but may be approximated more easily with the use of high-fat diets and bedtime feeding. The introduction of the newer modified protamine insulin is an attempt to meet this objective with greater safety.

In diabetics with low renal threshold for sugar it is necessary to avoid hypoglycemia but to allow glycosuria.

[1] Abstract of an address presented at a meeting of the Academy of Medicine, Cincinnati, February 29, 1944, which members of the Cincinnati Dietetic Association attended.



AFTER SAMUEL PEPYS heard of the blood transfusion experiments of Harvey, he seriously believed that a dog receiving sheep's blood would gradually become a sheep and be a source of wool. Spiritual qualities were attributed to the blood for centuries.

ANOTHER FALLACY that still lives, however, is this: canned foods keep because they have preservatives added. You, yourself, may have met this misconception among your patients.

As is well known, the Federal Food and Drug Act does not permit the use of any preservative in canned foods. Canned foods keep because they have been heat-processed in airtight containers. The heat process destroys spoilage bacteria which might be present—the sealed container prevents further infection by such organisms and insures preservation.

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Whereas there is no danger from glycosuria *per se*, the management of these cases is equally easy with high-fat diets. The carbohydrate supply must be high enough to prevent ketosis, but the adjustment can be made only by determining that the insulin dose is not too great, as judged by late afternoon, or early morning blood sugar. (The occurrence of a surprising number of such cases in the past year leads to a suspicion that protamine insulin may be responsible for altered renal permeability to glucose.)

It would be entirely feasible to standardize the treatment of most diabetics on a diet furnishing about 100 gm. carbohydrate. This is adequate for all, except the febrile, thyrotoxic, or those with very low thresholds. The caloric intake would then be varied by trial additions of fat until weight control was satisfactory. Protein would be set at or usually above $\frac{2}{3}$ gm. per kilo per day. Assuming a 70-gm. protein level, 100 gm. carbohydrate, and 2800 calories, this would require 235 gm. fat, not at all difficult to eat. To obtain the same energy content with even as little as 100 gm. fat, would require 404 gm. carbohydrate, which would make management of diabetes difficult with or without insulin. If one chose to use 150 gm. fat, the carbohydrate would have to be 291 gm., still a genuinely high carbohydrate diet. The ease of adjusting diet to fit the diabetic seems much greater if the level of carbohydrate is kept below 150 gm. daily.

The alleged disadvantages of high-fat allowances have included the increase of ketosis, disproved; the increased risk of arteriosclerosis, which is a bogey so far as I can determine; difficulty in digestion, which experience shows is not true, even in cases with chronic cholecystitis. Greater cost of fats, especially in wartime, is offset by the better clinical management and reduced dose of insulin. Finally, the approval of the patients who use the diet shows that high-fat diet can be used for years with comfort, satisfaction, and maintenance of health, so that the pragmatic test for over two decades makes it as defensible as any other.

STUDIES OF CONSUMPTION, AND SALVAGE OF MEAT CARCASS FAT

A report recently submitted to the Committee on Food Composition, National Research Council, by Lt. Comdr. C. M. McCay, based on studies made at the Naval Medical Research Institute, Bethesda, Maryland, again demonstrates the wide variation possible between calculation of food intake, based on tables, and calculation of food intake *as actually eaten*. Repeatedly, individual preferences and individual food habits are shown to be the major conditioning factors here. Such reports also serve to show that there is a stimulating and as yet largely untilled field of research in any large producing kitchen and under normal conditions of daily operation, unbiased by the artificial simulation of situations which prevails in a laboratory.

In his report, Commander McCay states that the major variables in the problem of salvaging carcass fat within mess galleys, and determining the effect of the degree of fatness of meat on calculations of calories and protein consumed, involve the following: the meaning of the word "edible" and the use of values showing percentage waste in meat; practices in trimming meats before they are cooked and served in mess halls; habits of men in refusing to eat visible fat; calories available without restriction in such forms as bread; and the ratio of beef and pork served. "Edible" is defined as "fit to be eaten." In the case of a pork chop the edible portion consists of the lean meat plus the fat, only the bone being considered as inedible. In any group of well-fed people, however, the visible fat is likely to be trimmed off by those who consider the fat "inedible." Therefore, if the so-called edible portion of meat includes fat not generally eaten, the men may be credited with consuming more calories than is actually the case. If the carcasses as issued have more than the usual amount of visible fat, the cuts such as chops from these carcasses will likewise have more, which will be likely to be trimmed off after the chops have been served and finally discarded as garbage. Yet, the amount of meat issued may be unchanged in pounds per man and the actual calories issued may show an increase. The estimated calories, too, may remain unchanged because the estimator is unaware of change in the composition of the carcass. Actually, the men may be consuming fewer calories and less protein, and more fat will appear in the scullery wastes which are sold as garbage and in which the fat is not reclaimed.

For example, in a large galley the meat wastes were separated from other leftovers on the plates of 200 men and the mean serving of meat to each man was determined by direct weighing. The following data indicate the results: For each 121 gm. pork chop served, the actual wastage in bone was 34 gm., and that of fat (43 per cent of original weight) 23 gm., as compared with an estimated total wastage (when based on the usual table value of 19 per cent) of 23 gm.; for pork loin, of every 192 gm. served, 23 gm. bone and 47 gm. fat were wasted, as compared with an estimated total wastage of 36 gm. Incidentally, the estimated value, 19 per cent, which is derived from food tables, is based only on wastage as bone. The data indicate, according to Commander McCay, that some other value must be used for large-scale feeding operations. He points out that there is also an additional loss of fat in the large-scale cookery of chops. The housewife cooks these in a skillet; in the galley they are cooked rapidly on the smooth surface of the stove, with a cloud of vapor arising. At times this fat on the stove surface and even that on the chops catches fire and burns. Another shrinkage factor mentioned in the report is the loss in weight of pork chops from the time they are taken from refrigeration until they are served, which involves a loss of both fat and water, amounting to 36 per cent. We might suggest in regard to this point that at high temperatures and without added moisture this loss is largely due to volatilization.

In general, the report states, beef carcasses are well trimmed before or in the process of cutting, and the fat, along with extracted juices, is usually served as gravy. Visible fat served on steak is the chief form of table wastage in the case of beef. The same is essentially true for pork chops, although the amount of fat remaining on chops when served tends to be large in comparison to that on steak.

The consumption of the visible fat from carcasses may be considerable in galleys if it is rendered and used for deep-fat frying. One supply officer for a large naval station reports that the availability of this rendered fat precludes the need of using fats from stores, except that used in special baking. However, in this station there is still an excess of fat and 1.2 lb. suet per man per month goes into salvage. In another naval station in which no rendered fat is employed in cookery, the salvaged grease runs 2.5 lb. per man per month. In still another, about half the fat used for cookery is now rendered directly from that obtained from the carcass. Before this practice was adopted, the fat sold as salvage was about 1.5 lb. per man per month. This has now dropped to below 0.5 lb.

The process of rendering fats within the galley needs to be studied, according to Commander McCay, to determine if the use of fuller's earth and simple filtration might be

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indicated. He states that no reliable data seem to be available concerning the effect of cooking different foods upon the deterioration of the fat used in the deep-fat frying. Also, the quality of the fat before it is re-used may be modified by the conditions of rendering in the galley. It is suggested that some simple tests should be devised to guide the cooks in evaluating the condition of fats to be used in deep-fat frying, since at present they tend to judge quality merely by color and viscosity.

Men at the naval stations studied differed considerably in their willingness to consume the visible fat of meat such as pork chops. It was observed that those who ate most of the fat represented a minority. This failure to consume available fat is reflected in a study of the composition of the scullery wastes from a mess hall feeding 7500 men. The figures, which were derived from the mean daily values for 10 days, follow (bread and liquids not included): Weight of dry tray wastes per man per day, 110 gm.; per cent fat (ether-soluble) in dry waste, 32 gm. In other words, from this mess hall about 500 lb. fat was being discarded as garbage daily and therefore could not be used either for soap or food. If fed to swine it might be reconverted into edible lard to the extent of about one third or less.

As might have been expected, the ratio of beef and pork served influenced both losses of fat in garbage and the amount available for consumption. In a large naval station studied recently the meat served was 62 per cent beef and 30 per cent pork. During this period the finish of the beef declined somewhat, and there was a little less visible fat, while the visible fat on pork increased by about 8 per cent as judged by the meat inspectors.

Conclusions drawn, as a result of the studies, were briefly: As the amount of visible fat or pork increases, wastage of fat in the garbage is liable to become greater, the calorie consumption less, and the intake of animal protein decreases about one or two per cent. The rendering of fats within the galley and the use of these in cookery may produce an estimated but not actual decrease in calories consumed. More attention needs to be given to the habits of men in eating the visible fats of meat. The best methods of rendering and clarifying fats from meat trimmings in mess galleys, and of deep-fat frying of various items in order to improve flavors and safeguard the fat for re-use, need to be determined. It is proposed that in large galleys both trimmed and untrimmed chops might be offered to satisfy individual preferences and thereby reduce fat wastage.

Nutrition and the War

CHILD NUTRITION: MEXICO, EGYPT, BELGIUM, INDIA

Immediately after the United Nations Conference on Food and Agriculture at Hot Springs, in May and June 1943, some of the delegates from other countries spoke under the auspices of the United States Department of Agriculture, Washington, in a continuation of "The Food Front" series of lectures delivered in 1942. The new series was intended to provide comparison between the nutrition problems of our own and those of other countries represented at the conference, and the talks, with the exception of that by Professor J. C. Drummond, British representative, have been published by FDA under the title, "A Brief Review of Food and Nutrition in Five Countries."

Naturally, the nutrition of infants and children was touched upon by each delegate, including methods of improving the nutritional status of preschool and school children. Their problems, so varied yet so similar to our own in many respects, have been approached from many different angles. For example, Dr. Francisco DeP. Miranda, director of the National Institute of Nutrition of Mexico, stated:

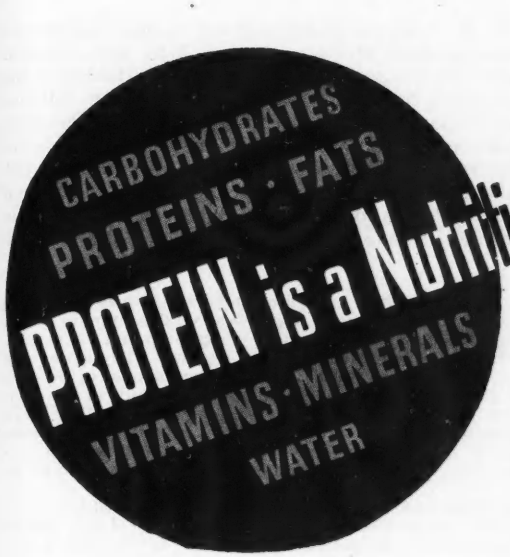
> The feeding of children is going on in homes for children, collective homes, and substitute homes, which are taking the place of the old orphanages and asylums for children. In Mexico we have considered that there is no real replacement of the home atmosphere. We are doing away with asylums and orphanages which are so far from the spirit of the home. We are seeking women who have a good background and giving them the opportunity to head groups of 8 to 20 children in their private homes. We are paying for all the assistance to these children. The results already attained are very favorable.
>
> The population of collective homes, which in 1941 was only 272, increased to 1179 in 1942 in the federal district alone, and that of substitute homes, which was 201 in 1941, grew to 579 during 1942 in the federal district.
>
> The "Milk Provision" provided milk to 2570 infants in the federal district. The total number of children receiving assistance in food, not including the inmates of hospitals, was 16,020, including 3625 children who received school lunches in Mexico City.
>
> The first act of General Avila Camacho the day he took office as President was to order the Secretary of Public Assistance to erect public dining rooms for the benefit of low-income families. Family dining hall No. 1 was opened in November 1941 and serves 3 meals a day to 1200 persons, of whom more than half are children of preschool and school age. The service is paid for in part by the family, but only one fourth of the cost is thus recovered. Social workers and dietitians study the applications received for this kind of service. The benefits of this type of organization will be extended to other parts of the country.
>
> Special mention must be made of the work of the Secretary of Public Assistance in promoting private organizations which are cooperating in the school lunch program.

Professor Ali Hassan, University of Fouad I, Cairo, Egypt, outlined the activities of the Egyptian Nutrition Committee, formed in 1939, which has the cooperation of the university, several departments of the government, and the Ministry of Social Affairs, Ministry of the Interior, and the Ministry for Pious Contributions (trustees for money left to churches or charity). Professor Hassan, after describing food habits in the five geographical regions of Egypt, reported recent efforts by the Ministry of Health toward improving the nutritional state of the population in general, as follows:

> In 1922 we did not have a single center for child welfare. Now, we have many of these child welfare centers, and at present they are looking after one seventh of all the infants born in the country. We have a birth rate of about 600,000; these centers look after about 95,000. They take care of the mother before and after parturition. The center supplies milk for the baby, clothes, etc., and educates the mother in the management of the baby and of herself. They have a propaganda section where they exhibit educational films and give short talks on the value of hygienic methods, etc., for the rearing of healthy babies. They also, on occasion, give prizes to mothers for the care they give their young. The Ministry of Health keeps an eye on foods to ensure their quality and freedom from injurious substances. The sale of foodstuffs is controlled by the government.

A report presented at the Hot Springs conference by Dr. A. Hussein, representing the Egyptian Ministry of Social Affairs, was quoted by Professor Hassan.

> Elementary public schools in Egypt teach about 1,000,000 boys and girls from the age of 7 to 12. A large number of these boys and girls are undernourished, owing in the first place to the very limited resources of their parents.
>
> Some experiments have been made in the last few years in providing pupils of a number of these schools with a daily meal. The physical and mental development of these pupils exceeded very remarkably the development of those in other schools.
>
> Last year an act was passed whereby the State undertook to give a daily meal in all public schools. The State alone finances the scheme. All the pupils, whether rich or poor, get their meal free, as any differentiation would have a bad moral effect.



★ Milk and bread are two of the common foods which contribute appreciably to all six classes of nutritional essentials required in proper kind and amount for normal good health.

In this respect milk and bread are nutritionally balanced much better than many other common foods.

With the new crop flour showing marked reduction in protein content, it is fortunate that nonfat milk solids help so materially to keep bread nutritionally well balanced. This staple ingredient not only helps to produce better tasting baked foods but supplies superior milk proteins, now needed more than ever.

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The meals given are planned by a qualified dietitian. They are meant to make good the deficiencies in the ordinary diet of the pupils which is normally poor in protective foods. The meals consist mainly of milk, eggs, cheese, legumes, fresh vegetables, and fruits. They are cheap and easy to prepare.

The execution of this scheme started at the beginning of this year; 185,000 pupils are getting their meals now, and it will not be long before all the other boys and girls get their meals.

Public kitchens are being opened in poor sections of cities, where hot luncheons are supplied at a very low price (2½ cents, or 25 per cent of the cost). An investigation is made in each district by a social worker. Poor families are selected and given cards which permit them to take meals from these kitchens to their homes. As in the former case, the meals were planned by a dietitian to enable these poor families to get the protective foods they lack. The kitchens are financed either by the State or by benevolent societies or private individuals.

As an aside, Professor Hassan mentioned that the Department of Animal Husbandry was trying to improve the breed of the buffalo, "which is the milking animal par excellence because it gives more milk than the cow—milk that is much richer than cow's milk . . . about 7 per cent fat, on an average. That is why, at present, Egypt chooses the buffalo for butter production."

In Belgium, several investigations were made on the state of nutrition of the population before the war, according to Professor E. J. Bigwood, Department of Biochemistry and Nutrition, University of Brussels, now a member of the Advisory Council of the Belgian Government in London. He stated that certain experiments were conducted in schools to test the influence of extra, protective foods on the nutritional status of children. One of these experiments he described as follows:

Just before the war, we made a fairly important experiment of this kind on some 600 children in schools in Brussels. There we compared the results that we obtained by having milk consumed at school on the one hand, and the Oslo-breakfast type of meal .... composed of whole-meal bread with butter and cheese, half an orange, and a pint of milk. But in our experiment, we reduced the amount of milk in the Oslo breakfast, simply because we were comparing this type of meal with the scheme providing milk alone. In the other group the milk ration was high and sugar was added to it in order to increase the calorie intake.

We were not dealing with the children of the poorest classes, but with families of low- or average-income groups of the population. We knew the experience that England had with respect to the distribution of milk in schools, and, on the other hand, of the Oslo-breakfast type of scheme. We tried both, and we printed a fairly extensive publication on its experimental bearing on the general physical condition of the children, on their height and weight, thus their growth; also on the influence on their mental fitness as judged from their behavior at school. This publication, a book of some 350 pages, came off the press just two days before the Germans came into Belgium (*Une experience alimentaire en Belgique*, by E. J. Bigwood, G. Jaeguemyns, and Paul M. G. Levy—Imprimere Vronans, Brussels, 1940).

We found that the Oslo-breakfast scheme gave us very much better results than the milk scheme, but this difference was chiefly observed among the boys. The milk scheme and the Oslo-breakfast scheme gave us, on the average, the same results with girls; with boys the advantage of the latter was tremendous. We had the children divided into three groups: one, a test group for comparison, received no extra food at school; a second group was put on the milk scheme; and a third, on the Oslo-breakfast scheme. The physical condition of the children was assessed at the beginning and the end of the experiment, which lasted about 8 months. The test group improved in about 25 per cent of cases; the milk group, about 50 per cent; and the Oslo-breakfast group, about 80 per cent. We consistently obtained similar results as indicated by growth curves as well as improvement in mental fitness and behavior at school. The outstanding beneficial results obtained with the Oslo breakfast were practically all found in boys, whereas, with girls, the milk scheme gave the same beneficial results as those obtained with the Oslo breakfast. We were of the opinion, however, that further investigations were needed to confirm those findings. The schoolmasters, who were very skeptical at the beginning of the experiment, were fully convinced of the absolute necessity of improving the health condition of our urban school-aged children by methods which would adequately influence food habits.

Dr. W. R. Aykroyd, director of the Indian Institute of Nutrition Research at Coonoor since 1936, and nutrition expert for the League of Nations, Geneva, described the progress which has been made in public health and nutrition in India, despite almost insurmountable difficulties, including the operation of the "famine code" which is for the purpose of supplying those in famine areas with nearly enough food to meet their requirements. The feeding of school children has not been developed very far in India. Dr. Aykroyd depicted their efforts in this direction as follows:

In certain cities, there are quite extensive schemes for feeding poor children, for example, the province of Madras supplies a daily meal to school children, consisting of rice pulp and vegetables, which I think has brought quite good results. The provision of milk to school children is usually impossible because of the difficulty of getting a reasonably good supply of milk in sufficient quantities. In a few places, there has been an issue of milk to a certain number of school children, but it is usually almost impossible on account of expense and one has to be satisfied with a meal consisting, say, of rice and of some vegetables as is done in the Madras.

We had, here and there, before the war, encouraged the use of imported dried separated milk, which is relatively cheap, for distribution to children in institutions, and also to day-school children. The dietary side of maternity and child welfare work, and infant welfare work generally, has shown some development, but a great deal more needs to be done.

There is one genuinely successful piece of work which has been achieved in nutrition in India, the improvement of diet in institutions. And there has been a visible and striking improvement in diet and health in children's institutions in South India during the period I have been in the country. The problem is often very acute. We received a request in Coonoor for an adequate diet coupled with the information that the total amount of money available to spend on the food was less than 3 rupees (about a dollar in U. S. currency) per child per month; it is by no means an easy task to devise a suitable diet within those limits.

TRAINING WITHIN INDUSTRY PROGRAM

In line with the growing interest in accelerated training programs for employees, necessitated by the rapid labor turnover as a result of the war, a panel discussion of Job Instruction Training courses was held at the New York State Dietetic Association meeting, May 26. The discussion was led by Mr. G. W. Campbell, area representative, Training Within Industry, War Manpower Commission. The experiences and preliminary conclusions of those dietitians who had been trying out this new "J. I. T." procedure are worth noting, for it will certainly influence employee training programs of the future.

A brief explanation of the principles of the plan and an example of the method of presentation used at Rochester General Hospital, New York, were given by Effie May Winger as follows:

Job Instruction Training is a simplified and organized method of instructing and training for a new job. It puts into practice the elementary principles learned in college courses in education and psychology and is based on the theory that if you will but take time to analyze the job, break it down into its several parts or steps, you will find that instruction is greatly simplified.

In our department we had difficulty in getting employees to make well-brewed coffee, so here was our opportunity to try out this streamlined method of instruction. First, we took the time to break down the job, list the principal steps, and pick out the key points. Then the dietitian took the worker to the coffee urns, and followed the 4-step method of instruction, presenting the operation carefully and patiently, clearly and completely, one step at a time, so as not to overwhelm the worker with more than he could master.

As the instructor said, "It worked," and we then proceeded to teach three other employees to make good coffee by means of this simplified and organized method. We can now ask any one of four employees to make coffee with assurance that the results will always be standard.

From the point of view of the director of the Nutrition Department in a large hospital, Nelda Ross, Presbyterian

The Seriousness of Body Protein Wastage

cannot be overlooked in acute febrile disease and after serious injury. Adequate amounts of protein of high biologic value, containing all the indispensable amino acids will prevent such wastage.* The proteins of meat are of highest biologic value, the RIGHT KIND for prevention of body protein wastage and for quicker recovery.

*"In acute febrile diseases and after serious injuries protein wastage may rise to 3 or more grams per kg. of body weight per day. . . . This is a matter of great importance, since loss of protein tissue sacrifices the substance of liver and other important organs. . . . Every effort should be made to prevent this loss by administration of diets containing adequate amounts of protein of high biologic value containing all the essential amino acids in proper proportion . . . ground meats may . . . be given earlier and more freely than is generally believed." (Nutritional Aspects of Convalescent Care, J.A.M.A. 124:1207 [April 22] 1944).

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

AMERICAN MEAT INSTITUTE

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Hospital, New York, described the effects of the J. I. T. course on both supervisors and employees.

At the Presbyterian Hospital, New York, young supervisors who have received Job Instruction Training believe that it enables them to teach employees more effectively because of the following:

1. It stimulates their interest in teaching.
2. It provides a basic plan applicable to any condition.
3. It necessitates more orderly organization of details for teaching.
4. It makes the supervisor realize her responsibility to teach in an organized manner—"If the worker hasn't learned, the instructor hasn't taught."
5. It makes the worker more efficient.
6. It gives the supervisor more confidence in her ability to get results.

These supervisors have taught pantry maids, Dietitian's Aides, student nurses, and student dietitians by this method.

In the class in Job Relations Training, supervisors of various departments attended in a group, and thus had an opportunity to learn about the problems in other departments and to understand their difficulties. In attempting to develop favorable relations between supervisor and employees, we face such difficulties as the following: Many employees have not been in the hospital long enough to develop a sense of loyalty to the supervisor or the institution. Many have never worked before and are not too anxious to work now. Many are part-time workers and do not see a job through, hence they feel no real sense of responsibility in their jobs. Many situations arise which result in absenteeism in women employees—such as furloughs of relatives in service.

The experienced supervisor has learned a great deal by trial and error. The young dietitian has not yet had the benefit of such experience, nor can she be told how to handle all personnel problems; she, too, must learn by observation and experience. In the meanwhile, the training in Job Relations teaches her that it is not always wise to take immediate action, at least not until she has all the facts and can weigh them and make her decision. This is very important. I believe that inexperienced supervisors generally feel they should be able to make instantaneous decisions. Job Relations Training shows them that they are more efficient if more deliberate.

The young supervisor, too, may feel that she must handle all problems herself, else she will be shirking her responsibility. Job Relations Training shows her that there are often simple problems which she should not handle herself but should refer to her superior.

I should like to see more emphasis in the Job Relations course on relations between departments. That problem is perhaps the most difficult for the average dietitian whose duties bring her in contact with many departments. If several of the supervisors were asked to bring to class problems which include relations with other departments as well as those concerned with supervisor-employee relationships, helpful discussions might follow.

Another point which is covered in a general way might be given further emphasis in this course, namely, that no one should go directly to the employee except his immediate supervisor. Thus a direct line of authority through director, supervisor, and employee is maintained. If a supervisor is skipped in the handling of a problem, even though it may seem an emergency at the time, strained relations may result. The employee perhaps feels unjustly criticized if by someone other than his direct supervisor; the latter, in turn, will feel that there has been implied criticism of her work.

The Job Relations course gives the inexperienced supervisor an authoritative plan of action and therefore the assurance that she knows how to handle problems correctly. She can then feel justified in her actions when she adheres to this plan.

Ellen Guernsey, Strong Memorial Hospital, Rochester, told how the principles learned in the course had influenced her own teaching and that of another dietitian at the same institution.

Although I have not made complete "job breakdowns" for all the instruction that I have given since taking the Job Instruction Training Course, I find that the principles learned in the course affect and color all the training and supervising which I do. Of course, while the subjects of education and psychology are included in college courses, this definite plan for job instruction coordinates into a working scheme all our theoretical knowledge.

The most formal job breakdown made thus far at Strong Memorial Hospital was done by the dietitian in charge of the baby formula room. She also made a very careful and interesting analysis of the results of this J. I. T. program, which was designed to teach an inexperienced employee to prepare and pour baby formulas. Following is her summary of this application of J.I.T. principles: The teacher was greatly aided by the learner who, incidentally, was also a staff member. The learner asked many questions which enabled the teacher to note those points which are likely to puzzle a new employee, and to realize that a teacher who knows the job thoroughly may tend to overlook the need for explicit details. The teacher became aware of the learner's point of view and thus constructive additions were made to the job breakdown. For example, it was discovered that a 20 or 30-minute period of instruction and explanation just prior to the actual teaching of the job facilitates the process of perfecting technique. This was also found to be true in teaching a specific part of the job, *i.e.*, preparation, pouring, and completion of orders. When preliminary instruction was given, the learner progressed very rapidly and asked fewer questions.

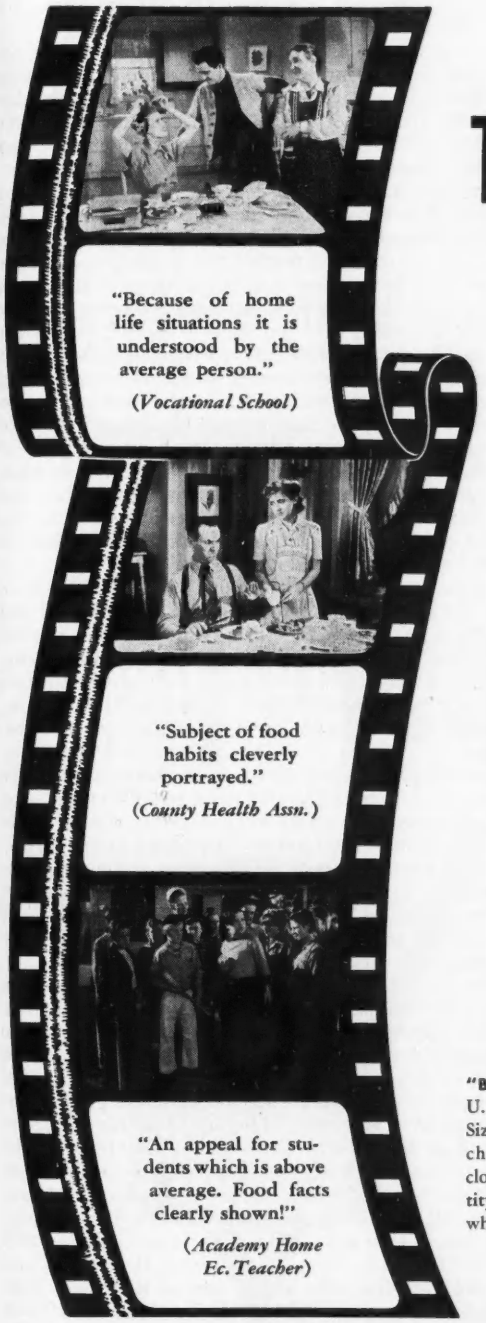
The value and importance of J.I.T. methods were impressed upon me most forcefully when one of our class group gave her practice instruction. The job to be taught was the sharpening of hypodermic needles. The job breakdown was neither clear nor complete; but the learner grasped the process readily and learned to sharpen needles satisfactorily. The instructor mentioned, incidentally, that few are able to sharpen needles satisfactorily. It was obvious, therefore, that even with an imperfect job breakdown, this new method of instruction was superior to that used formerly and better results were obtained in a shorter time.

ACTIVITIES OF AN INDUSTRIAL NUTRITION COMMITTEE

A report of activities of the Industrial Nutrition Committee for Essex and West Hudson Counties, New Jersey, was presented by Della L. Cordery, chairman, at the meeting of the New York State Dietetic Association in May. Miss Cordery is home service consultant for the Public Service Electric and Gas Company, New Jersey. A few of the high lights of her report follow.

The committee was organized in June 1943 and is affiliated with the Essex County Nutrition Committee. Separate sections are concerned with the problems of food operators, plant health departments, and labor-management. During the year since its organization, members of the Food Operators Section had visited various industrial cafeterias in the district to observe in-plant feeding techniques, at the invitation of the food operators of the plants visited. After the visits, suggestions were made for improving menus and methods, the purpose of the surveys being the exchange of ideas on arrangements and menus, and observation of practical details under conditions of actual operation. In addition, the committee collected from commercial concerns quantity recipes and menus which were distributed to 68 food operators, and sponsored a training course for this group.

One especially interesting project described by Miss Cordery was the sponsoring of a Nutrition Evaluation Booth in the cafeterias of several local war plants, in cooperation with the nutritionist of the local American Red Cross chapter and Public Service Electric and Gas Company. Tray cards distributed to the workers aroused interest with the following catch-line: "Let Us Read Your Tray," and the idea was elaborated as follows: "Are you getting a balanced lunch? Have you made the wisest selection? These and many other questions will be answered by authorized Red Cross nutritionists who will be here to give free recipes and information on foods, diets, calories, etc." Those who submitted trays for inspection were awarded attractive certificates on which the selection of food was scored on a percentage basis, according to foods of various classifications included. Then, since the committee recognized the fact that a lunch may or may not be inadequate but that the entire day's food is most important, the scored workers were given sheets showing how to score all three meals, and their meals other than lunch were discussed with them as time permitted. Displayed on screens in back of the booth were nutrition posters, also literature which was available to the workers,


"Because of home life situations it is understood by the average person."
(Vocational School)
"Subject of food habits cleverly portrayed."
(County Health Assn.)
"An appeal for students which is above average. Food facts clearly shown!"
(Academy Home Ec. Teacher)

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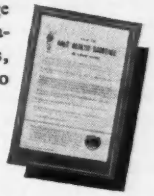
"HALT HEALTH SABOTAGE" FOLDERS. 6-page guide to eating for health to supplement message of film. Free in reasonable quantities, for distribution to film audiences.



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including USDA pamphlets containing recipes; a series of leaflets entitled "Food for Fitness" containing recipes, shopping lists, information about vitamins and minerals, etc.; and commercially published food charts, pamphlets, etc.

Incidentally, during the year, the Industrial Nutrition Committee distributed 4069 pieces of literature to workers via cafeteria operators, labor-management, and health groups. To plant managers and others they distributed 500 FDA industrial feeding manuals, and 2453 nutrition posters. They provided free consultations for plant managers, cafeteria operators, and to union groups on food service in industrial plants. Surveys were made of four commercial box-lunch services, and contests were conducted through newspapers for packed lunch menus, for which daily prizes and a final grand prize were given.

The committee hopes to increase the scope of its activities in 1944–45, by extending its service to factories and plants not yet covered, and by expanding the educational program so that more of the nutrition information will carry over to members of the workers' families.

PSYCHOLOGICAL ASPECTS OF INDUSTRIAL FEEDING[1]

LOWELL S. SELLING, DR. P.H.

Psychopathic Clinic, Recorder's Court, Detroit

So far as I can determine, there is no consistent attempt at meal planning or education in industry designed to help the worker to make himself better fitted for the tasks before him. The problem is not entirely that of nutrition, rather of the integration of nutrition knowledge with applied psychology. Even though adequate meals are provided in the plant cafeteria, unless sufficient incentive is offered to bring the workmen into the cafeteria and unless the latter is easily accessible to the worker, much of the dietitian's work is wasted.

The psychological approach to the problem is twofold. The workman's attitude, interests and habits must be considered to ensure that he receives the proper food when he is at work; and to ensure that he is properly fed at home the proper approach to his wife is necessary. An example of the latter is the Westinghouse plan.

No single program can be given for the indoctrination of management. Each plant or corporation controlling a group of plants has different ideals, different aims, and different goals. Management is harried by a number of pressure groups, all of whom have problems which they consider more important than lunch for the worker. If management for no other reason than to promote the efficiency of the plant and to foster good feeling puts in a cafeteria headed by a skilled nutritionist, it is confronted with the possibility that the labor unions may disagree with this policy or they may suspect that it is being done in order to lay plans for a wage cut. The industrialist, who as yet knows little about nutrition, is inclined to be wary about these programs.

In feeding employees, one finds himself completely overwhelmed by the diversification of psychological problems which present themselves. While these differ in different plants, there are a few considerations that are fairly universal:

1. The worker wants as much time for rest and relaxation during his short lunch period as possible. If he can sit down and relax and have time to chat while he eats, it makes little difference to him where he gets the food or how it is provided.

2. Whether food is adequate in quantity or quality for the workman depends more upon the emotional atmosphere of the plant than on the actual food itself. Reasonably well-prepared food which meets the common standards found in the workers' homes will not in itself produce any complaints. Complaints against food arise when the emotional situation in the plant is tense. When there is a threat of strike the workers in some plants have been known to express the belief that the management tampers with the food in order to punish the workers. Management must also be very careful, when there is tension in the plant, to see that the food portions are adequate, else the workers will claim that the plant is making money out of their need to eat. Incidentally, I might point out that plant-operated dining rooms are much more successful than those run by concessionaires, for the idea is common among many employees that the contractor is interested only in making money and will supply an inferior grade of food at the highest possible price; whereas if it is made known, perhaps through union cooperation, that the management has provided the best possible food at the lowest cost, perhaps even with subsidization, the food will be accepted with much better grace.

3. Food must be adjusted to shift hours. Workers on different shifts have different attitudes toward food and anyone planning menus for three shifts should provide suitable dishes for a lunch, dinner, and breakfast menu. Even when on the night shift, many will prefer to have their breakfast at the end of the shift because it is morning and therefore time to have cereal, bacon and eggs, toast, and coffee.

4. Any meal-planning must take into account the type of employee for whom the food is prepared. For instance, men strongly resent the small portions ordinarily served to women, even though the food is of excellent quality.

5. In-plant feeding should be based on a survey of the eating habits of those in the plant. For instance, workers living great distances from the factory prefer to eat their breakfast in the plant, if available. This is particularly true of unmarried men and women employees.

Although the psychological problems which arise when we attempt to feed people of different ages, racial extraction, home experiences, and traditions are difficult to handle, that of trying to see that the same people are fed properly at home is even more difficult. Today, in most of our large industrial communities, workers in a given plant come from all over the city. The only possible chance of educating them would be by means of the local newspapers. Language difficulties, too, contribute to the problem, as well as illiteracy, and disinterestedness in cooking and meal preparation, all of which make it difficult to arouse interest. Often a woman's time is so taken up with her children that she can give but little thought to her meal program and always there are those who are so sure of their own techniques that it is very difficult to advise them. Last but not least, in making any plan for educating the housewife we must not forget that she is apt to be intellectually exhausted by the flood of government pamphlets, magazine advertisements, articles in magazines and newspapers, the radio, and the placards in the grocery stores, telling her to eat this and that and the other thing, until she grows bewildered.

In order properly to draw a large group of these women it is necessary, first, to stimulate their interest, possibly by prizes offered through the plant, or awards, medals, or contests in the schools whereby the children can be encouraged to take nutrition literature home to their mothers.

[1] Excerpts from an address read before the Greater New York Dietetic Association, New York, May 8, 1944.

"THE GRAINS ARE GREAT FOODS"

More than a great slogan . . . IT'S A FACT!

FULL EQUIVALENT IN CALORIES

Kellogg's delicious ready-to-eat cereals are packed with energy. An average, one ounce, serving provides 100 calories of energy value.

FULL EQUIVALENT IN VITAMINS AND MINERALS

All of Kellogg's cereals are made from whole grains or are fully restored to whole grain levels of thiamin, niacin and iron.

IMPORTANT IN PROTEIN

Kellogg's ready-to-eat cereals, served with milk, afford a mixture of proteins that is nutritionally complete.

NOTE: Visit the Kellogg Exhibit during the Convention to obtain recently revised Nutritive Value of Kellogg's Ready-to-Eat Cereal Chart.

EQUAL IN CALORIES—VITAMINS—MINERALS

One ounce of a Kellogg's Cereal. | One ounce of the raw uncooked grain. | An average serving of cooked cereal of the same grain.

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For Vitamin C in Palatable Form

Just add water to produce a pleasant fruity beverage approximating the Vitamin C potency and caloric value of fresh orange juice, at a standard cost of 5¼¢ a gallon!

Because of its palatability, economy and labor-saving convenience, many institutions had adopted V-C-B as a standard for administering Vitamin C, even before the present shortage and high cost of fresh citrus fruits.

Only one 4-oz. liquid portion of V-C-B beverage supplies individual daily requirements—1000 International Units—of Vitamin C and 50 calories. V-C-B is also valuable for fortifying fruit juices and beverages with Vitamin C.

Hermetically sealed in oxygen-free containers, V-C-B keeps indefinitely; there is no spoilage or waste. If you have not tried V-C-B, send for a trial order now!

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V-C-B and all advertising claims for it are accepted by the Council on Foods of the American Medical Association.

SEND FOR YOUR TRIAL ORDER NOW!

Single 1 lb. 12 oz. cans...each	$ 1.40
1 Doz. 1 lb. 12 oz. cans...doz.	13.50
3 Doz. 1 lb. 12 oz. cans...doz.	13.25
6 Doz. 1 lb. 12 oz. cans...doz.	13.00

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Probably the least valuable educational approach is through the worker-husband directly. In the majority of cases the husband, if he lives in harmony with his wife, is likely to accept her cooking, on the theory that it is the best she can do or that it is what he likes. To ask him, therefore, to take home a sheaf of material for his wife to read is an imposition and, I think, of no value whatsoever.

Placards in the plant, if each is confined to one topic and suitably varied from time to time, can be interesting and of some value, but our American public is already over-placarded and postered. If the workman does notice a poster because of its unusual design or attractiveness, it is doubtful whether any message it carries becomes fixed in his memory. It is just another poster and he may be curious to see what it is, but there is nothing about a poster or a pamphlet which ensures that it will affect the personality or the living habits of the person who sees it.

In those communities that can be reached directly by the nutritionist, house-to-house calls or block organizations offer the best promise for nutrition education. If the community learns to like a nurse, a nutritionist, or anyone else who has it within her power to help them, the information she gives is gratefully received, but to integrate oneself adequately into the community takes time and cannot be rushed.

APPOINTMENTS AND PROMOTIONS, ARMY MEDICAL DEPARTMENT DIETITIANS

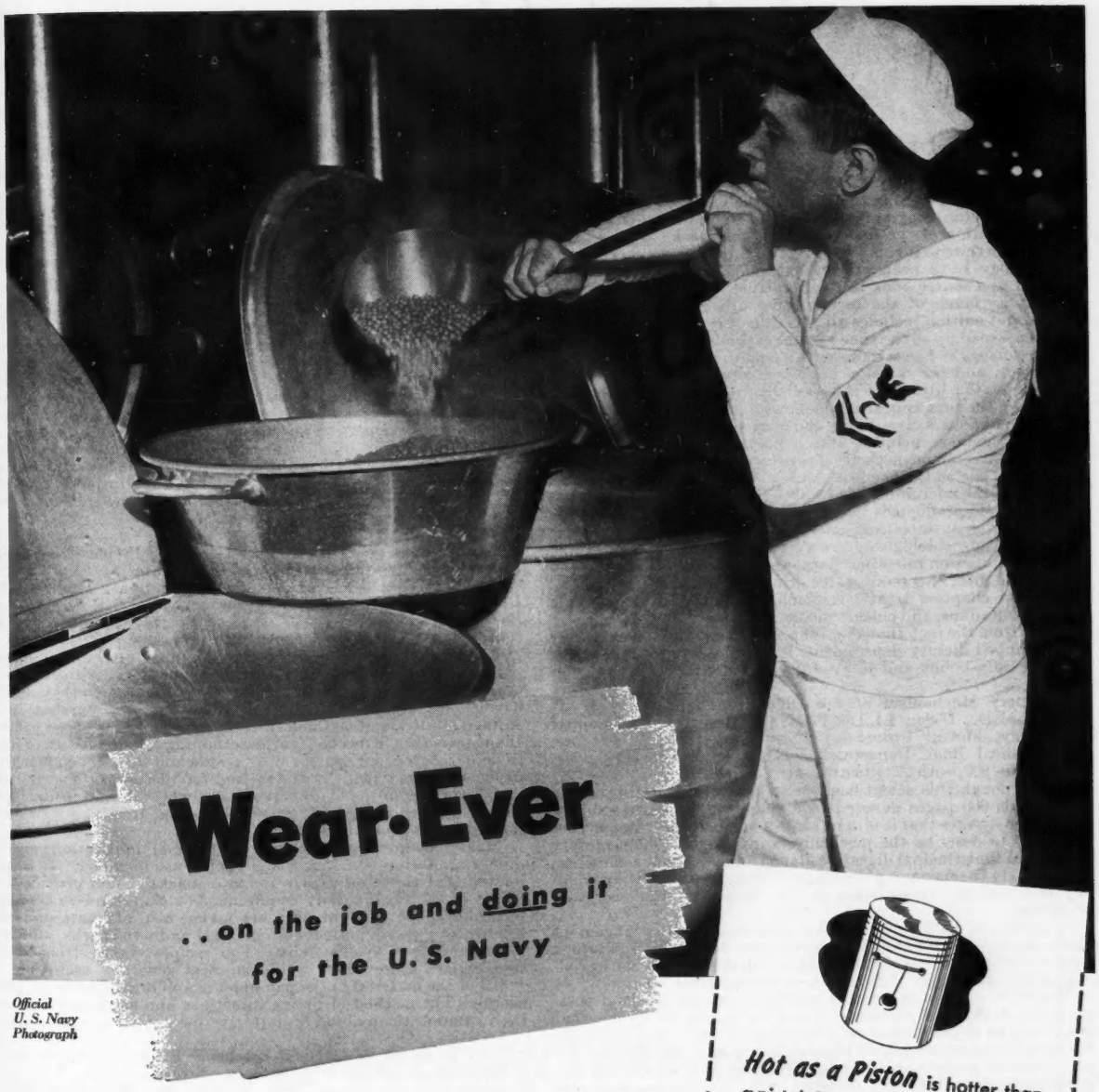
The following dietitians were appointed to the Army Medical Department in August:

Armstrong, Mary Agnes: St. Olaf Col., Northfield, Minn.; Walter Reed G. H.
Austin, Margaret Jane: Univ. of Washington; Indiana Univ. Med. Cent.
Batzis, Katherine: Univ. of New Hampshire; Lawson G. H., Atlanta, Ga., and Lovell G. H., Ft. Devens.
Baxter, Kathryn Jane: Santa Barbara State Col., Calif.; Scripps Metabolic Clinic, La Jolla, Calif.
Bevins, Florence Miriam: Univ. of Vermont; Walter Reed G. H.
Booker, Grace Louise: Kansas State Col.; S. H., Ft. Leonard Wood, Mo.
Borchert, Evelyn Anna: Stout Inst., Wisc.; Univ. of Minnesota Hosp.
Breimyer, Mildred Elizabeth: Indiana Univ.; Miami Valley Hosp., Ohio, and O'Reilly G. H., Mo.
Cobb, Wanda Emma: Univ. of Vermont.
Comins, Jean Elizabeth: Woman's Col., Univ. of North Carolina; Walter Reed G. H.
Conger, Agnes Etta: Iowa State Col.
DeNegri, Anna Theresa: Mary Washington Col., Va.; McCloskey G. H., Temple, Tex.
Folmar, Evelyn: Univ. of Alabama; Vanderbilt Univ. Hosp.
Foss, Dorothy Helen: Ohio Wesleyan Univ.; Jewish Hosp., Philadelphia.
Fuller, Jean Eleanor: Univ. of Illinois; Ancker Hosp.
Groner, Dorothy Mae: Syracuse Univ.; Oliver G. H., Augusta, Ga.
Guba, Frances Victoria: Syracuse Univ.; St. Luke's Hosp., New York.
Hagan, Gladys Catherine: Framingham State Teachers Col.; New York Hosp.
Hammill, Janet Anne: Drexel Inst. of Tech.; Johns Hopkins Hosp. and S. H., Ft. Lewis, Wash.
Hemmer, Annaleen: Col. of St. Catherine, St. Paul; Johns Hopkins Hosp. and S. H., Ft. Lewis.
Henke, Evelyn Catherine: Seton Hill Col., Greensburg, Penn.; Florida State Col. for Women.
Hidnert, Frances Evelyn: Univ. of Maryland; Edward J. Meyer Mem. Hosp., New York, and Halloran G. H.
Hoole, Marguerite Catherine: New York Univ.; St. Luke's Hosp., New York.
Horrocks, Katherine Charlotte: State Col. of Washington; Seattle Course for Dietitians.
Hunt, Gladys Virginia: High Point Col., N. Carolina; Oliver G. H., Augusta, Ga.
Jacobson, Katherine Susan: Iowa State Col.; Univ. Hosp., Cleveland.
James, Elizabeth Louise: Univ. of Connecticut; Walter Reed G. H.
Jeannotte, Lenore Lillian: Mt. Mary Col., Milwaukee; Good Samaritan Hosp., Cincinnati, and S. H., Ft. Leonard Wood.
Kantrowitz, Jean Roberta: Hunter Col.; Lawson G. H., Atlanta, and S. H., Camp Campbell, Ken.
Kerkes, Ruth Marie: Michigan State Col.; Brooke G. H.
Leahy, Margaret Imelda: Fontbonne Col., St. Louis; Walter Reed G. H.
Lewis, Emily Virginia: Madison Col., Va.; Johns Hopkins Hosp. and Halloran G. H.
Loetterle, Emma Helen: Univ. of Missouri; Mercy Hosp., Chicago, and S. H., Ft. Leonard Wood.
Loughridge, Catherine Bagby: Texas Tech. Col.; S. H., Cp. Grant, Ill.
Lundstrom, Evelyn Marie: Framingham State Teachers Col.
Lydon, Josephine Constance: Boston Univ.; S. H., Ft. Dix, and Tilton G. H., N. J.
McCaw, Elizabeth Agnes: Univ. of Colorado; St. Mary's Hosp., Rochester, Minn.
Macri, Rosa Clementina: Simmons Col.; Walter Reed G. H.
Mathews, Marjorie Jean: Michigan State Col.; Calif. Hosp., Los Angeles, and Percy Jones G. H., Battle Creek.
Miller, Gussie Anna: Southwest Louisiana Inst., Louisiana State Univ.; Walter Reed G. H. and Bushnell G. H., Brigham City, Utah.
Montgomery, Mary Kathryn: Texas State Col. for Women; Massachusetts G. H.
Newell, Barbara Mildred: Connecticut Col.; Walter Reed G. H.
Northington, Margaret Ann: Univ. of Georgia; S. H., Ft. Dix; and Tilton G. H., N. J.
Parham, Myldred Merle: Univ. of Texas; Oliver G. H., Augusta, Ga.
Pearson, Georgiana: Univ. of New Hampshire; Mass. G. H.
Perteit, Loraine Wilma: Univ. of Illinois; Oklahoma A. & M. Col.
Reynolds, Daphne: Univ. of Maryland; Beth Israel Hosp., Boston.
Rossing, Ruth Marie: Univ. of Wisconsin; Indiana Univ. Med. Cent.
Ruane, Catherine Marie: Marywood Col., Scranton; Walter Reed G. H., and S. H., Cp. Campbell, Ken.
Sandmeyer, Kathryn Marie: Univ. of Illinois; S. H., Ft. Bragg.
Sell, Gladys Letitia: State Teachers Col., Tenn., and Teachers Col., Columbia Univ.; S. H., Ft. Bragg.
Skadeland, Lois June: North Dakota Agric. Col.; Lawson G. H., Atlanta.
Spragg, Doris Maxine: Iowa State Teachers Col.; Good Samaritan Hosp., Portland, Ore.
Stieg, Betty Mae: Montana State Col.; Johns Hopkins Hosp. and S. H., Ft. Lewis.
Strobino, Alba Blanche: New Jersey Col. for Women; Walter Reed G. H.
Sutton, Helen Sara: Oregon State Col.; Seattle Course for Dietitians.
Swanson, Lorene Merium: Oregon State Col.; Johns Hopkins Hosp. and S. H., Ft. Lewis.
Taxelius, Gwendolyn Lorraine: Washington State Col.; Johns Hopkins Hosp. and Halloran G. H.
Totilas, Elizabeth Ruth: Framingham State Teachers Col.
Walker, Mabel Alice: Oklahoma A. & M. Col.; Univ. of Oklahoma Hosp.
Wells, Dorothy: Univ. of Illinois; St. Luke's Hosp., New York.

The following promotions for August were announced:

Second Lieutenants to First Lieutenants

Grace Crook Levis, R-657
Jeanne Ann Postle, R-172
Frances E. Selzer, R-40
Alice Jane Stuart, R-447
Ruby Zillah Winslow, R-613



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The United States Navy has long been the largest single user of Wear-Ever Aluminum Steam Jacketed Kettles. Hundreds of them are in service aboard ship and at shore bases.

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Hot as a Piston is hotter than a pistol. The terrific heat generated inside your automobile cylinders must be removed. Because Aluminum pistons and cylinder heads transfer this heat better than cast iron, they are used in many automobile engines. Good heat transfer is also a reason why aluminum makes good cooking utensils. The Aluminum Cooking Utensil Company, 1310 Wear-Ever Building, New Kensington, Pa.

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Book Reviews

Microbiology of Foods. Second edition. By Fred Wilbur Tanner, Ph.D., D.Sc. Champaign, Illinois: Gerrard Press, 1944. Cloth. Pp. 1195. Price $12.50.

As the author states in the Preface, the many advances in the science of bacteriology and especially in its application to foods since publication of the first edition of this book, have made it necessary to rewrite it completely. The subjects of mycology and microbiology have been greatly expanded. Since the work is intended as a source book to the literature as well as to methods of analysis, much of the recent literature has been reviewed. The present edition includes all major methods of analysis which had been issued up to the time of publication.

Microbiology of Foods represents a comprehensive treatment of its subject, and the revision has been carefully executed. The coverage of the literature is especially impressive. References supporting the text appear at the bottom of each page, and a list of reference books is given at the end of each chapter. The subject matter of the book includes, first, a chapter on food preservation which covers common methods of processing and types of spoilage, followed by one on the bacteria, and another on yeasts and molds, after which the microbiology of water and sewage, and of various foods and food products is treated in separate chapters. There is also a chapter on intestinal microbiology, in which, the author states, food microbiologists have a legitimate interest, concerning the effect of diet on intestinal flora, also the effects of fasting and low-protein diet, of copious water drinking, of high-protein diets, etc. Final chapters treat microbiological methods of assaying foods for vitamins, and culture media.

Aside from the fact that this is an important reference for any well-equipped dietary department, it is a pleasure to own a book so beautifully bound and so carefully edited.

Secretory Mechanism of the Digestive Glands. By B. P. Babkin, M.D., D.Sc., LL.D., F.R.S.C. Research Professor of Physiology, McGill University. New York: Paul B. Hoeber, Inc., Medical Book Department of Harper & Brothers, 1944. Cloth. Pp. 900, with 220 illustrations. Price $12.75.

Even though this scientifically and technically well-executed book totals 900 pages devoted to a single, well-defined subject, the author stresses that it is in no sense a monograph. Its purpose is merely to describe the mechanisms involved in the secretory activity of the principal digestive glands under normal conditions, and possibly to serve as a physiological introduction to the pathology and clinical investigation of the diseases of this secretory apparatus.

A student of Pavlov, Dr. Babkin acknowledges the "ingenious observations" of William Beaumont over 100 years ago which culminated in Pavlov's distinguished contributions to our knowledge of the physiology of the gastro-intestinal tract.

While the content is directed specifically to the needs of post-graduate students of medicine, it will, of course to a somewhat more limited degree, serve as a sound and much needed means of bringing the practicing dietitian up to date on the vast amount of literature pertaining to the subject and likewise serve the student of nutrition and dietetics who is pursuing graduate studies.

We anticipate that the author's clear delineation of the subject of hormones in relation to the alimentary canal will be particularly helpful to the dietitian. A brief sample of the author's clear-cut style follows:

> In the previous chapters we have seen that the secretory activity of the gastric glands is regulated in three different ways: through the nervous system, by the supposed formation of a hormone, "gastrin," in the mucous membrane of the pyloric part of the stomach, and by the action of certain food substances or the products of their digestion, which after they are absorbed enter the circulating blood and stimulate the gastric glands directly or through the vagal secretory center in the brain, or perhaps act through the local nervous plexuses. . . . What do we mean by a "hormone"? The word was introduced by Starling on the suggestion of Mr. W. B. Hardy. It is derived from the Greek, meaning "I arouse to activity" or "I excite." Sharpey-Schafer proposed that the word "autacoid" (a medicinal agent or remedy) be used to describe any substance formed in an organ or tissue and carried by the blood to other organs or tissues, where it produces an effect analogous to that produced by drugs. Autacoids are of two kinds—"hormones," which are excitatory, and "chalones," which are inhibitory. Therefore by a hormone or a chalone is meant a chemical substance that is formed in some groups of cells in the body, either spontaneously or under the influence of a stimulant, passed into the circulation, and conveyed to all the organs and tissues of the body, although it produces its specific effect in only one or a few organs. This point must be emphasized most strongly, because not every substance that may be extracted from an organ and may produce an effect on other organs or on the whole body is a hormone or a chalone. The successful extraction of an active substance is merely an indication, and not a proof, that the substance in question is really a hormone, and other, more exacting evidence is required in order to establish the true hormonal nature of such a chemical substance.

The Hospital Yearbook. 1944 edition. Chicago: Modern Hospital Publishing Co., Inc. Paperboard. Pp. 912.

This twenty-second edition contains a completely revised directory of hospital suppliers, classified by products, plus a section of catalogues. The editorial reference section has been completely revised, new check lists and other reference data added. There is a section on planning hospital kitchens, with check lists of equipment needed, another on planning storage of supplies, including a list of foods with temperatures required for storage. Incidentally, the check list on which that just mentioned is based is one originally prepared for *The Hospital Yearbook* by Herman Smith, M.D., and Katherine Mitchell Johnson and Ada Belle McCleery.

Children and Food in Day Care Centers. Prepared by Social Welfare and Public Health Department, Greater New York Southeastern District Home Economics Association. Published by *Home Economist*, Room 302, Community Service Society, 105 East 22 Street, New York. Paper. Pp. 54. Single copies 40 cents; 10 or more copies 35 cents each.

As stated in the Foreword, this pamphlet presents in simple nontechnical language essential facts about the nutritional needs of children and the types and quantities of food which they should have. It gives practical advice about choice, purchase and storage of food, and methods of cooking to safeguard food values. It suggests simple methods for determining the quantities of food to be purchased, for use of ration points and for kitchen management and sanitation. It is designed for the use of teachers and social workers in the child care centers who will find in the book the answers to many of their problems and fruitful suggestions for improvement of their program.

Meal plans for breakfast (served at home), midmorning snack, dinner, midafternoon snack, and supper are included. It is estimated that the noon dinner and two snacks should provide two thirds of the child's daily requirements. Suitable size servings for children of different ages are given, also amounts of foods needed for a 5-day period, for one meal and two snacks, and two meals and two snacks daily. The recipes, taken from other sources, are those which would be most generally useful.

All of the material in the pamphlet is well organized and highly useful. The method of listing directions and suggestions rather than running them along in narrative form is to be commended.

Fifty Years in a Maryland Kitchen. By Mrs. B. C. Howard. Completely revised by Florence Brobeck. New York: M. Barrows and Company, 1944. Cloth. Pp. 234. Price $2.50.

To those with educated palates, the phrase, a Maryland kitchen, awakens pleasant memories of delicious food, while "à la Maryland," affixed to a dish, is a never-failing whet to the appetite. For the famous Eastern Shore foods, along with the mellow influence of the Deep South and the artistic heritage of the French emigrés, form the basis of a cuisine of which the state and its people are justly proud.

Welcome, indeed, then, is this revival of a famous Maryland cook book now approximately 100 years old. While the recipes, even in their revised, modern dress, are still keyed to a more lavish day and are therefore unsuitable for humdrum daily use, they will be valued when planning an occasional and exceptional meal, providing a fillip to the imagination when menus tend to grow stale.

In true Gallic style, many of the recipes call for wine, that ingredient so wedded to good food. Cream and butter, too, are in fairly routine demand, but on the whole the required ingredients are generally available, even under rationing. The dietitian in charge of food services will find the chapters on soups, fish, sauces, desserts, and that on chicken and other birds especially interesting.

The DOLE PICTURE today

Members of the medical profession who have recommended Dole Pineapple Juice to their patients may be wondering about its availability. Much to our regret, it is still hard to get because of the increased demands of the Armed Forces. However, we are glad to say that Dole Pineapple Juice, even though it may be seldom seen,

is still high in quickly assimilated food energy and contains minerals which give alkaline reaction in the body.

is still a welcome variation in the fruit juice diet because its refreshing flavor appeals to both adults and children.

is still the true, undiluted juice of sun-ripened pineapples.

is still a good source of Vitamin B_1 and Vitamin C.

is still convenient to use—just "punch and pour."

Current Literature

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

Vol. 208, July 1944

*Factors influencing the return of tolerance for glucose in middle aged obese diabetics. M. B. Handelman.—p. 15.

*Diabetes mellitus associated with Albright's syndrome. F. B. Peck and C. V. Sage. —p. 35.

Glucose Tolerance in Diabetics. Fifty-five ambulatory diabetics observed over a period of 4 years were all obese and in all instances the onset of diabetes occurred after 40 years of age. On low-carbohydrate diets they gradually lost weight, glycosuria disappeared and carbohydrate tolerance improved. The entire plan will fail unless the patient wholeheartedly cooperates, the disease is diagnosed early, and the patient is middle-aged.

Albright's Syndrome and Diabetes. A case is reported in which severe diabetes mellitus and Albright's syndrome were diagnosed —the only one on record. The conditions may bear some relationship to a common factor, the pituitary gland. Osseous lesions, skin pigmentation and endocrine dysfunction were the symptoms noted, also insulin resistance and unresponsiveness to hypoglycemia.

AMERICAN JOURNAL OF PHYSIOLOGY

Vol. 141, July 1944

*The effect of some internal factors on human work output and recovery. E. E. Foltz, F. T. Jung and L. E. Cisler.—p. 641.

Effect of Internal Factors on Work Output and Recovery. When the total work output of a given performance is increased above that of previous performances, it concerns mainly the first work-period. The work output of the second work-period remains fairly constant. This leads to the conclusion that training increases the ability to do work in the first work-period and does not greatly increase the ability to recover. There is a slight but significant negative correlation between feeling-tone and the total work output; the better a subject said he felt, the less his total output. There is no correlation of feeling-tone with percentage of recovery. There is a somewhat stronger negative correlation between the amount of sleep and the total work output; the more sleep a subject has had on a given night, the less his total output the next day. No relation of sleep to percentage of recovery is seen. There is no evident relation of bed-time on a given night to the amount of work or percentage of recovery on the following day.

AMERICAN JOURNAL OF PUBLIC HEALTH AND THE NATION'S HEALTH

Vol. 34, June 1944

*Nutritive value of canned and dehydrated meat and meat products. E. E. Rice and H. E. Robinson.—p. 587.

*Nutritive values of canned fruits and vegetables. J. F. Feaster.—p. 593.

Nutrition: a factor important for industrial hygiene. G. R. Cowgill.—p. 630.

Vol. 34, July 1944

*Nutritive value of brined and fermented vegetables. I. D. Jones and J. L. Etchells. —p. 711.

*Nutrition as a science in wartime. Food and Nutrition Section.—p. 774.

II. Vitamin B complex. Status of assay methods and need of these substances by man. Food and Nutrition Section.—p. 783.

Nutritive Value of Canned and Dehydrated Meat and Meat Products. Protein quality is not significantly reduced during dehydration or canning unless diets very low in proteins are considered. Vitamin retention of pork and beef undergoing dehydration or canning is similar to that under conditions of household cooking. Cured pork undergoing commercial canning retains 67% of its thiamin, 90% of its riboflavin, 94% of its niacin and 76% of its pantothenic acid. During storage of either canned pork, dehydrated pork, or dehydrated beef at temperatures up to 99° F. there is little or no loss of niacin, riboflavin, or pantothenic acid over a period of 219 days. Above 120° F. there are slow losses of riboflavin, and pantothenic acid. Thiamin decreases more rapidly, showing some loss at 80° F.

Nutritive Values of Canned Fruits and Vegetables. The energy, carbohydrate, protein and fats derived from canned fruits and vegetables may be considered as being of slight nutritional significance, their chief nutritive value being associated with the vitamins and minerals they contain. Canned citrus fruits and tomato products are among the more valuable dietary sources of ascorbic acid. The provitamins A contained in canned leafy green and yellow vegetables constitute a major source of vitamin A activity in our diets. More concentrated food sources of the B vitamins and minerals are not found among fruits and vegetables either fresh or canned. However, many canned fruits and vegetables contain important quantities of niacin, thiamin, riboflavin, calcium, phosphorus, and iron, nutrients which many diets supply in suboptimal quantities. Certain differences in nutritive values of canned products are discussed.

Brined and Fermented Vegetables. Certain vegetables which are important sources of proteins, starches, and minerals, are well adapted to brine preservation and these constituents may be well retained.

Nutrition as a Science. This report deals with the need for certain types of fundamental research through the war period which are specifically geared to winning the war, and which will give a clearer picture of the contribution that nutrition can make to public health.

ANNALS OF INTERNAL MEDICINE

Vol. 21, July 1944

*Rheumatic fever: diet as a predisposing factor. D. C. Peste.—p. 44.

Rheumatic Fever. The average diet of 50 rheumatic patients was very low in calcium, phosphorus, iron and vitamins A and D. In some instances, protein intake was low and there tended to be an excess of carbohydrates. A downward trend in the last three decades in rheumatic fever is the result of better food for the lower and middle-class groups. Adequate diets, sun bathing and bed rest for early rheumatic fever patients will continue to keep the death rate down.

ARCHIVES OF PEDIATRICS

Vol. 61, June 1944

*Thyroid disease in youngsters under age sixteen. Comments on a series of 1200 cases. I. Bram.—p. 300.

Thyroid Disease in Children. The etiological factors in simple sporadic goiter are heredity, faulty dietetic and hygienic habits, focal or general infections, and a singular incapacity of the thyroid to meet the requirements of growth and development. A large series of cases is summarized.

BULLETIN OF THE UNITED STATES ARMY MEDICAL DEPARTMENT

No. 76, May 1944

*Nutritional aspects of convalescent care: report of the committee. National Research Council. Committee on Convalescence and Rehabilitation.—p. 85.

Nutritional Aspects of Convalescent Care. A large part of the special report of the Committee on Convalescence and Rehabilitation of the National Research Council is reproduced in this article. This comprehensive summary is well worth the attention of all dietitians.

HOSPITALS

Vol. 18, May 1944

*Work manual. C. F. Gilmore.—p. 71.

Work Manual. Making certain that employees know the contents of a "manual for employees" is just as important as its preparation. It is suggested that the applicant be requested to read a copy of the manual, that it be discussed and signed by him at the time of hiring. This procedure has many points of merit because no intelligent person will sign the booklet without understanding its content, and once signed the manual becomes his personal property and is not likely to be left lying about carelessly.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 125, July 29, 1944

*How to avoid flare-ups of peptic ulcer. W. C. Alvarez.—p. 903.

Vol. 125, August 5, 1944

*Essentiality of amino acids. Editorial.—p. 974.

*Ascorbic acid loss in minced salads. Current comment.—p. 976.

Vol. 125, August 12, 1944

*The mechanical cow. Council on Foods and Nutrition.—p. 1041.

ICE CREAM is a

fighting food and a great morale builder

ICE CREAM supplies body-building proteins, minerals, and vitamins that mean stamina.

To be good fighters, men must have good food—and American fighters are the best fed in the world. The officer and civilian technical food experts responsible for their diets deserve great credit for the outstanding strength and stamina of our armed forces.

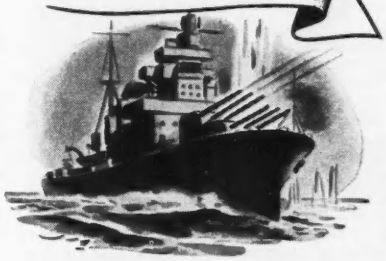
It is significant, therefore, that these experts specify ice cream for our fighters wherever it is practical to provide it for them. It is not only of tremendous value in building morale, but also supplies a wealth of the essential protein, minerals, and vitamins which build physical strength to withstand the grueling pace of war. It is because of this double service on the fighting front that ice cream follows the flag!

OUR FIGHTERS COME FIRST

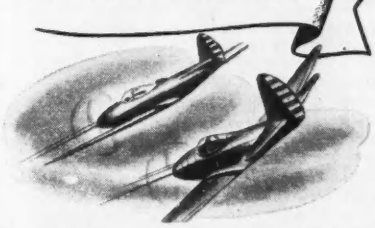
Naturally our fighters' needs come first, so you may not always get all the ice cream you want. But remember, this nutritious food has gone to war. By accepting slightly less now, you are sharing with our fighters. When their job is finished there will again be plenty for all.

in the Army

in the Navy



in the Air Forces



Food Value OF ONE SERVING OF VANILLA ICE CREAM

Calories	Protein Gm.	Calcium Gm.	Vitamin A I.U.	Thiamin Mg.	Riboflavin Mg.
200	3.9	0.131	399	0.038	0.105

NATIONAL DAIRY COUNCIL, 111 N. CANAL ST., CHICAGO 6, ILLINOIS

Vol. 125, August 26, 1944

*Lactic acid, a corrosive poison. E. G. Young and R. P. Smith.—p. 1179.

*Insulin requirement of man after total pancreatectomy. Current comment.—p. 1193.

Peptic Ulcer. A man of 50 who had always been well discovered one day that the man who for 20 years had been his closest friend and business partner had been falsifying books in order to steal from him. All that night he lay awake in great mental stress, and the next day he had a gastric hemorrhage. A physician, after examining a woman's stomach with a roentgenoscope, discovered that he had used a current of 60 milliamperes instead of the usual 3 milliamperes. After lying awake all night worrying over the expected burn and resultant damage suit, he found himself almost incapacitated by the pain of a bad ulcer. Another man, when a violent strike in his factory distressed him considerably, had a bad hemorrhage. A woman who adored her daughter-in-law inadvertently offended her and excited a storm of abuse. Next day a long-healed ulcer flared up and perforated. A woman who heard that her soldier husband had just been killed at the front promptly had a hemorrhage. The patient with ulcer is most in danger of a flare-up or a catastrophe during the hours immediately following a distressing emotional storm. It now appears probable that most of the injury to the duodenal mucosa wrought by acid occurs between 10 p.m. and 3 a.m., when the stomach tends to be empty of food but full of highly acid and unbuffered gastric juice. It is suggested that it be logical the evening after a nervous crisis has occurred to begin with either a constant antacid drip or the taking of food and antacids every 1 or 2 hr. from dinnertime to 2 or 3 a.m., the patient setting an alarm clock to wake himself perhaps at midnight and again at 2 a.m.

Amino Acids. Not long after the demonstration, on the basis of chemical analysis, that some proteins fail to provide certain amino acids, nutritional studies with experimental animals established that growth, maintenance, and physiologic well-being cannot be attained unless certain amino acids are available to the animal. The work of Hopkins and of Osborne and Mendel served to turn attention from the importance of the quantity of protein in the diet to a consideration of the biologic significance of the quality of the food proteins as regards their amino acid content. At present it is generally accepted that there are 10 amino acids essential for the growth of the young white rat. However, caution is expressed lest the attitude prevail that protein nutrition in general can henceforth be satisfied with only the recognized essential amino acids or that the rest of the protein molecule is nutritionally of little importance. Another factor which must be considered in the metabolism of substances administered by mouth is the activity of intestinal bacteria. Young rats given a complete diet containing all the essential amino acids failed to grow if succinylsulfathiazole was added to the diet. Having taken into consideration the vitamins known to be synthesized by the bacteria in the intestine, the suggestion is made that a significant part of the nonessential amino acids is provided to the host organism by synthetic action of the intestinal bacteria; once these are rendered inactive by the sulfonamide drug, the real need of the host for preformed amino acids is disclosed. Although further work in this field is needed, it is already obvious that the concept of indispensability of any dietary constituent can be held only under well-defined conditions. This view applies likewise in the field of therapeutics and so merits renewed attention in medicine.

Ascorbic Acid Loss in Minced Salads. Recent studies have shown that mincing speeds the rate of disappearance of ascorbic acid from fresh fruits and vegetables; enzymes, metallic catalysts, and fine division apparently favor oxidation. In military service minced salads are often prepared several hours before serving, so that methods of preventing rapid loss of this essential vitamin are of strategic importance. The rate of loss was twice as fast in control samples of minced green peppers sliced with a steel knife as when sliced with a plastic knife, the ascorbic acid content falling from 87 to 53 mg. per 100 gm. The loss was even more rapid in samples minced in the metallic chopper, the 2-hour assay being only 31 mg. per 100 gm., a 75% loss. Similar differences in the rate of disappearance of vitamin C were noted with all other vegetables. With radishes, for example, the 2-hour loss was 90% of the initial ascorbic acid content when this vegetable was minced in the metallic chopper, 30% when sliced with a plastic knife.

Mechanical Cow. The "mechanical cow" is a device which mixes water, spray-dried skim milk, and butter to produce a product intended as a substitute for milk or cream according to the proportion of ingredients employed. The "milk" produced in this manner, if sold, would be required to have a label declaration other than milk or in addition to milk. Though it may be prepared wholly from milk constituents which have been separated and remixed, the product is not milk under the legal definition of this term. The term "reconstituted milk" presumably is legally applicable. The principle of production of "milk" by the mechanical cow merits approval when dry skim milk, butter, and water are the ingredients. It is useful on ships and in regions where dairies are inadequate or nonexistent.

Poisoning. The deaths of 3 premature infants, when investigated both pathologically and chemically, were found to be due to an acute hemorrhagic and gangrenous gastritis, following the administration of an acid milk mixture containing an excess of lactic acid. Lactic acid must therefore be regarded as a corrosive poison, and due care must be exercised in its use as an infant food.

Insulin. It can be concluded that the depancreatized man requires less insulin and is more sensitive to insulin than many diabetic patients. The question consequently arises as to whether in the causation of diabetes not only lack of insulin but also an insulin-inhibiting mechanism may play a part. The line of investigation suggested may throw new significance on the etiology of human diabetes mellitus.

JOURNAL OF BIOLOGICAL CHEMISTRY

Vol. 154, June 1944

*The effect of the nature and level of protein and amino acid intake upon the accumulation of fat in the liver. J. M. R. Beveridge, C. C. Lucas and M. K. O'Grady.—p. 9.

*Interrelationship between thiamine and riboflavin in the liver. H. O. Singher, C. J. Kensler, H. Levy, E. Poore, C. P. Rhoads and K. Unna.—p. 69.

*The relation of the diet to the composition of tissue phospholipids. IV. The action of choline and choline precursors in weanling rats. W. H. Fishman and C. Artom.—p. 109.

*The relation of the diet to the composition of tissue phospholipids. V. The action of choline, vitamins, amino acids, and their combinations in two month-old rats. W. H. Fishman and C. Artom.—p. 117.

*The effect of excessive nicotinamide feeding on rabbits and guinea pigs. P. Handler.—p. 203.

Vol. 154, July 1944

*The creatine content of the gastrocnemius muscle of young male rats on diets varying in choline content. E. Roberts and H. C. Eckstein.—p. 377.

Effect of Amino Acids on Liver Fat. It has been shown that certain essential amino acids have a marked effect on the lipotropic efficacy of methionine. No significant difference was noted in the lipotropic effect exerted by methionine when fed as the free amino acid or in casein, provided the essential amino acids were approximately equalized in the two diets.

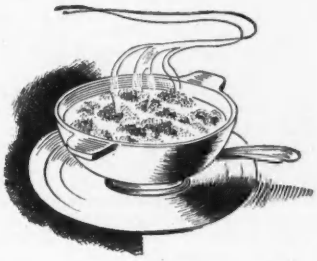
Thiamin and Riboflavin in Liver. In young rats depletion in thiamin was found to increase the concentration of riboflavin in the liver above that of control animals. In riboflavin deficiency, thiamin concentration of the liver was higher than in control animals. Concentrations of thiamin and riboflavin in the liver of rats deficient in pyridoxine, in pantothenic acid, in biotin, or in vitamin A were not significantly different from those of littermate controls maintained on adequate amounts of these vitamins. The results are interpreted as evidence of an interdependence of thiamin and riboflavin.

Diet and Phospholipids. When weanling rats are placed on an experimental diet, values for lecithins are found to be lower than normal and a fat infiltration occurs in the liver. These changes are prevented to a considerable extent by the administration of choline. The relative ability of various suggested choline precursors to substitute for choline in these effects has been studied. The substances tested were ethanolamine, *dl*-methionine, *dl*-serine and glycine and some of their combinations. With none of them could the action of choline be duplicated, although ethanolamine, alone or together with methionine, was effective to a certain extent.

Diet and Phospholipids. In rats 2 to 3 months old maintained on an experimental diet, the supplementation after 7 days with choline, either alone or in combination with various substances (vitamins B, E, K, amino acids, and other nitrogenous compounds), did not reverse the changes in liver phospholipids induced by the unsupplemented diet. When choline supplementation was initiated immediately, values for liver lecithins were found which were significantly higher than in the corresponding controls, although lower than normal. This change was accompanied by a decrease in the non-choline phospholipid fraction.

Effect of Nicotinamide Feeding. It is apparent from these data that large amounts of nicotinamide in the diet of rabbits and guinea-pigs are innocuous. Unlike the rat, these species do not synthesize and excrete extra N′-methylnicotinamide under these conditions. Since effects of nicotinamide on the rat are completely alleviated by the administration of methionine, and since nicotinamide is not toxic in the diet of the rabbit or guinea-pig, it seems likely that the toxicity of this compound in the diet of the rat is due solely to the synthesis of N′-methylnicotinamide with consequent depletion of the available methionine supply. This situation affords an example of a process in which an essentially innocuous substance undergoes what has been considered a "detoxication" reaction and thereby produces deficiency of a necessary dietary component.

...because their health and happiness are *your* responsibility



Dietitians and Home Economists realize better than most people how definite a bearing food has on both health and happiness. Your training and experience is constantly demonstrating this fact. You know too, that no matter how beneficial food may be, little is gained when it is not sufficiently appetizing to be eaten in adequate quantities.

May we suggest that you investigate the *dual* advantages of Maltex Cereal? Maltex is nutritionally desirable because this hot, brown cereal is made from Toasted Wheat and Malted Barley by a process which brings out, to the full, the wholesome goodness of both grains. And Maltex has a distinctive "hearty" flavor which appeals so strongly to most children and adults that you can count on them to eat a "good" breakfast or supper whenever you serve this cereal.

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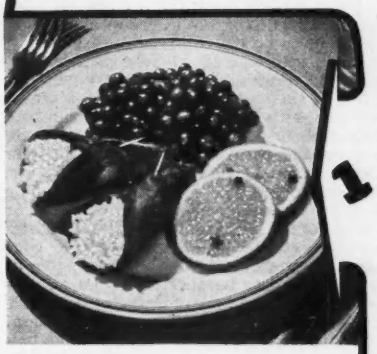
MALTEX Cereal

3 MENU IDEAS... To put Fall pep into faded appetites!



1 NEW ENGLAND CORNUCOPIAS

Cut thin slices of New England (cooked specialty); fold each slice to form a cone. Fasten with a toothpick. Fill with savory rice, well seasoned bread dressing or baked beans. Brush with melted fat. Heat in hot oven for 15 min.

2 MEAT LOAF BUNDLES

Cut thin slices of Minced Ham Loaf. Wrap around a bundle of cooked green or wax beans marinated in French Dressing. Fasten with a toothpick. Serve cold, or broil or heat in a hot oven.

3 HAM a la KING

Dice New England (cooked specialty) or Old Fashioned Meat Loaf. Combine with white sauce, some browned mushrooms and sliced green peppers. Serve on toast or in patty shells.

● The above recipes are typical of the appetizing dishes Swift's Table-Ready Meats make possible in short time and with comparatively little work . . . an important factor in these days of limited help. They are as nourishing as they are appetizing . . . taste as good as they look. You'll find them an excellent stimulant to proper eating—one your patients like. To be sure of quality, *remember to order by name*—Swift's Table-Ready Meats.

SWIFT'S *Table-Ready* MEATS

Dietary Choline and Muscle Creatine. The creatine content of the gastrocnemius muscle of young white rats is not lowered when a diet deficient in choline is fed for a period of 3 weeks. The addition of ethanolamine to this diet is without influence on the creatine of the muscle.

JOURNAL OF PEDIATRICS

Vol. 25, July 1944

*An analysis of children's eating habits. A. L. Baldwin.—p. 74.

An Analysis of Children's Eating Habits. Unsatisfactory eating habits are the rule rather than the exception among an unselected group of children, but only 15% of the group show sufficiently unsatisfactory behavior to be called "feeding problems." Good appetite and good table behavior are closely related variables and are found in homes in which strict disciplinary methods are combined with approval of the child. The type of strictness found in the homes of children with good appetites seems to be a strictness about a few essentials of behavior but not a strictness which completely determines the child's activities. This freer type of strictness seems to be psychologically healthful. The children from such homes tend to be socially well adjusted. The strictness found in the homes of children with good table behavior seems to stem from an attempt of the parents to force the child into complete conformity to adult standards. This excessive constraint on the child's behavior seems to render him incapable of free and spontaneous behavior and to hamper his social adjustment. A wide acceptance of foods and lack of finicalness is most generally obtained by an abundance of affection and attention. There is no evidence that a coercive discipline in the home can make children nonfinical.

NEW ENGLAND JOURNAL OF MEDICINE

Vol. 231, July 6, 1944

*Medical progress: The physiologic significance of vitamin C in man. M. Pijoan and E. T. Liozner.—p. 14.

Physiologic Significance of Vitamin C in Man. The use of ascorbic acid, either synthetic or in the diet, is for the prevention or treatment of scurvy. With the possible exception of its influence on amino acid metabolism in premature infants, no other role can be ascribed to the vitamin. A diet cannot be condemned as deficient in this vitamin unless a continued linear decline of the content of the vitamin in the whole blood, white cell-platelet layer or other tissue takes place, the appearance of scurvy being conclusive evidence. Relatively small amounts of the vitamin—possibly 25 mg. or under a day—are necessary to maintain fixed blood or white cell-platelet levels. Any fixed level of the vitamin in the plasma, irrespective of how little is present, indicates a nonscorbutic process and a positive body economy.

NEW YORK STATE JOURNAL OF MEDICINE

*Stability of the fasting blood sugar in diabetes mellitus. H. O. Mosenthal and F. U. Lauber. —p. 1555.

Stability of the Fasting Blood Sugar in Diabetes Mellitus. The fasting blood sugar over a period of 3 hours in 70 fasting diabetics showed a significant change in the blood sugar values in 63% of the cases. In 48% there was a drop in the blood sugar, and in 15% a rise. Consequently, the interpretation of the fasting blood sugar as a fixed quantity and an absolute guide to the status of the diabetes is not valid. Since the determination of fasting blood sugars often disrupts the day's routine as far as the administration of insulin and the time of breakfast are concerned, and may entail a good deal of nervous strain for the patient, it would seem preferable, at least in those diabetics who are not confined to a hospital, to obtain the blood some time after breakfast and make the proper allowances in evaluating the blood sugar.

PRACTICAL HOME ECONOMICS

Vol. 22, June 1944

*The history of home economics—Part I. H. T. Craig.—p. 244.
*Galleys are wartime kitchens. V. P. Herring.—p. 255.
*Planning for canning, 1944-45.—p. 256.

Vol. 22, July-August 1944

*The history of home economics—Part II. H. T. Craig.—p. 279.

History of Home Economics. Mt. Holyoke College, Massachusetts, founded by Mary Lyon in 1837, announced that students would assist with certain domestic duties because it was difficult to find domestic help. However, no formal education in home economics was given. Elmira College, founded in 1855, required its young women to take work in domestic science and general household affairs. When Vassar College was founded in 1865 the trustees discussed domestic economy but agreed that it did not belong in a liberal arts college. They agreed to give lectures, visible illustrations in the kitchen and dining room, and instruction on the care of clothes and rooms upon request, and set aside a time for sewing, but this experiment lasted only 3 years. Lasell Seminary, founded at Auburndale, Massachusetts, in 1877, offered courses in cookery, housekeeping, sewing, dressmaking, and millinery. In 1890 Wellesley College offered domestic science under Marion Talbot, but the course was discontinued when she was called to the University of Chicago.

Early in the nineteenth century a number of studies in nutrition were conducted. In Philadelphia, 1803, John R. Young carried on studies pertaining to digestibility of sugar, gum, beans, and wheat for his graduate thesis. During 1825, Dr. William Beaumont carried on experiments to learn the effect of gastric juices of the stomach on food. In 1829, Dr. Caleb Tichnor is credited with preparing a paper on the "Influence of Diet, Dress, and Amusements on Health." One of the first attempts by the Government to express interest in nutrition problems appears in an article written in 1847 in which a brief statement is given on nutrition elements found in wheat bread, black bread, milk, cheese, peas, and other foods. In 1852, R. S. Gould at the request of the Board of Commissioners of Immigration presented a report on food and diet suited to almshouses, prisons, and hospitals.

Many home economists feel that the "home economics movement" actually began with Catherine Beecher. Her *Treatise on Domestic Economy for the Use of Young Ladies at Home*, 1841, is one of the few cherished classics among home economics literature.

About 1860, cooking lessons were given by Professor Pierre Blat in several eastern cities. An event destined to play a large part in the future of home economics also took place at this time—the Morrill Land Grant Act of 1862.

The next reference to Government interest in home economics was made in a report in 1866 by the Secretary of Agriculture in which the need in the schools for subjects embracing home activities was expressed.

Toward the last quarter of the nineteenth century courses in domestic economy were a part of the curriculum in Iowa State College, Kansas State Agricultural College, and Illinois Industrial University. When Iowa State College was opened in 1869 the matron adopted the "Mt. Holyoke plan" requiring each woman student to work 2 hours a day in the dining room, pantry, or kitchen. More formal instruction in home economics was begun in 1872 with a series of lectures to the junior girls; in 1877 a kitchen was provided and lessons in cooking were begun; in 1879, courses in laundry work and sewing. Kansas State Agricultural College offered instruction in sewing in 1873–74; 2 years later a course of lectures was given on composition of bread and changes taking place during preparation, meat and changes in cooking, and composition and food values of vegetables. The kitchen for practical instruction was fitted out in 1877. Mrs. Nellie Kedzie took over the department in 1882.

Women were admitted to Illinois Industrial University in 1870, and in 1871–72 announcement was made that the university would open a School of Domestic Science and Domestic Art the following year. In 1874 the first teacher, Lou C. Allen, preceptress of the Peoria County Normal School, arrived to direct the department. By 1895, there were departments of domestic science and art in 14 colleges; in 1900, in 30 colleges. Colleges reporting a course for training teachers of domestic science by 1907 or earlier are: Connecticut Agricultural College at Storrs, Iowa State College, Michigan State College, Oklahoma A. & M. College, Agricultural College of Colorado, Agricultural College of Utah, Washington State College, and Utah State College. South Dakota State College reported plans to provide for teacher training in 1908.

In 1874, Juliet Corson undertook direction of the cooking department at the Free Training School for Women in New York; in 1876, at the New York Cooking School. Miss Corson developed a series of low-cost menus, 50,000 copies of which, published under the title "Fifteen-cent Dinners for Workmen's Families," were distributed.

Mario Parloa gave her first public lecture in the East in New London in 1876. In October 1877, she opened a cooking school in Boston, and in 1879 gave lectures and demonstrations at the Boston Cooking School which had been started that year by the Women's Educational Association of Boston. Of the principals associated with the school, Fannie Merritt Farmer is perhaps the most widely known.

The New Century Club in Boston opened a school of cookery in 1878 under the direction of one of Miss Parloa's pupils, and a fancy pastry cook. A relative of Mrs. Sara Tyson Rorer urged her to join the class, and she became so enthusiastic and progressed so rapidly that before the end of her first year she was giving lectures to the fourth year students at the Women's Medical College. She was elected president and after 2 years was urged by a number of Philadelphia physicians to open an independent school which continued as the Philadelphia School for 25 years.

Galleys. The SPAR Cooks and Bakers School at the training

"For Pete's sake! The Dietitian hugged me!" says Gracie Greenhand*

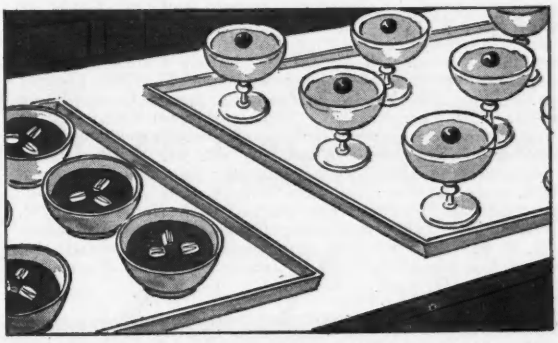
Dietitian: Gracie, aren't those desserts ready yet?

Gracie: Golly, desserts take time. Besides, I'm not very good at making 'em.

Milkman: Psst, Gracie! Take a tip from *other* places like this. Make desserts with Jell-O and Jell-O Puddings. It's s-o-o-o easy, even pretty girls as helpless as you are can make them!

Milkman: How goes, Gracie?

Gracie: *Wonderful!* Took your advice about Jell-O and Jell-O Puddings. *Now* I make desserts in a jiffy . . . and so many different *kinds!*



Gracie: Look at these trayfuls of delicious Jell-O and Jell-O Pudding desserts! Even the fussiest patients love 'em—and yet the dietitian says they're inexpensive enough to serve to the whole staff, too.

*Fictitious Name

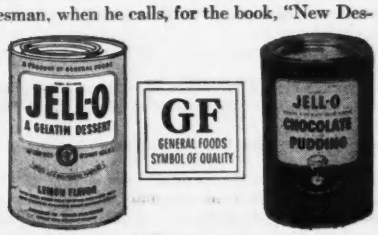
Gracie: And when *she* found out that an inexperienced hand like me could make desserts like an old-timer—why, *she actually hugged me!*

Jell-O & Jell-O Puddings

SEND FOR EASY WARTIME RECIPES!

New and **Free!** A grand book of desserts . . . popular, inexpensive, and the greenest help can make them. Includes a useful all-purpose Jell-O recipe using any combination of fruits, and loads of other recipes and suggestions for wartime Jell-O and Jell-O Pudding desserts that are easy and swell!

Just ask the GF Salesman, when he calls, for the book, "New Desserts," or address the Director of the GF Institution Kitchen, Miss Bertha E. Nettleton, General Foods Corporation, 250 Park Avenue, New York 17, N. Y.



station in Palm Beach, Florida, is directed by Lt. (j.g.) Dorothy Stewart who has her master's degree in home economics from the University of California. The galley instructor was formerly in charge of the experimental kitchen for a restaurant and later trained cooks for a chain of restaurants. The classroom instructor is a former teacher of home economics in public schools. The wardroom galley, where food is prepared for 60 SPAR officers, is the cooks and bakers laboratory, where appetizing, attractive meals are cooked and served on a set schedule 7 days a week. Commissary steward trainees plan meals, purchase food and adapt and test recipes, as well as supervise food preparation by the cooks and bakers, who are girls interested in food work, but not necessarily experienced in such work. They graduate with the rating of ship's cook third class. Each trainee spends 6 weeks in the wardroom where opportunity is provided for duty at each work station. During the final 2 weeks, trainees stand watch in the general mess for enlisted personnel, which provides approximately 6000 daily meals, under the direction of SPAR officers with civilian experience in large-scale food service. General instruction includes the fundamentals of large-scale food preparation with emphasis on quality standards of selection, cooking, and serving. Trainees make an extensive study of the use and care of galley equipment, safety measures in the galley, sanitation maintenance, and storing of supplies. In addition, they are taught organization of a general mess which covers inventories, computation of rations, and multiplication of recipes. All are required to take a quick brush-up course in arithmetic.

Canning. A one-year canning plan for home economics departments is charted, for classes with enrollments of 20, 40, 60, and 80. The amounts are intended to provide enough for 2 meal-planning and preparation units of about 4 weeks each in every class. With this quantity, considerable work can be done on the use of canned and dried foods in all units taught.

History of Home Economics. Home economics literature available by the close of the nineteenth century included: *Foods*, by Edward Smith, M.D., D. Appleton Century, 1873; *Domestic Economy and Household Science*, by Robert James Mann, M.D., London, 1880; *Science of Home Life*, by Jerome Harrison, Nelson & Sons, 1882; *Food and Feeding*, by Sir Henry Thompson, fourth edition, F. Warne & Co., 1885; *Household Economics*, by Helen Campbell, G. P. Putnam, 1897. Some early periodicals dealing with home economics, with date of founding and first editor, were: *The Caterer and Household Magazine*, 1882, J. W. Parkinson; *Good Housekeeping*, 1885, Clark W. Bryan; *Everyday Housekeeping*, 1894, Anna Barrows; *American Cookery*, 1896, Janet M. Hill; *Domestic Science Monthly*, 1900 (merged with *House Beautiful*, 1902), Mrs. W. Wakeman-Curtis; *Practical Home Economics*, 1906, H. B. Myers; *Household Arts Review*, 1908, Domestic Art League of Columbia University; *Journal of Home Economics*, 1909, Mrs. Mary H. Abel.

REVISTA DE LA ASOCIATION ARGENTINA DE DIETOLOGIA

Vol. 1, April, May, June 1943

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*Vitamin content of human colostrum. M. L. Herraiz and H. G. de A. Herrero.—p. 95.

Cassava poisoning. P. Escudero and B. Rothman.—p. 106.

*Effect of cooking on the flavin, nicotinic acid, and thiamin content of milk. A. Escudero, M. Herraiz and H. G. de A. Herrero.—p. 119.

*Food rationing in France. B. Rothman.—p. 133.

*The use of alfalfa in human nutrition. P. Escudero and P. Landabure.—p. 143.

*Preparation of alfalfa dishes. P. Stramesi and E. Falabella.—p. 148.

*The diet of rural Argentines—1750. P. Escudero.—p. 152.

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*The quantitative concept in the pathogenic interpretation of gout. P. Escudero.—p. 169.

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*Dr. Escudero's "normal calories"—their hygienic and economic aspect. E. Pierangeli.—p. 187.

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Comparative study of human and bovine colostrum. P. Escudero and J. E. Solá.—p. 203.

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*Importance of the fruit of the mesquite in human nutrition. A. Escudero, M. L. Herraiz and H. G. de A. Herrero.—p. 221.

*Types of institutional diet in Argentina. P. Escudero and B. Rothman —p. 225.

The prescription of bland diets. B. Rothman.—p. 234.

Duodenal feeding. C. C. de Rothman.—p. 240.

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*Chemical and bacteriological changes in "acidified milk." G. Waisman and A. de Soriano.—p. 225.

The fruits of the mesquite as a source of calcium in the diet. A. Escudero and M. L. Herraiz.—p. 266.

*A study of the diet furnished in the "Mitre" kindergarten. E. Pierangeli and P. A. Escudero.—p 273.

Vitamin B_2. A. Escudero and M. L. Herraiz.—p. 277.

Technique for weaning an infant at six to mine months. T. H. Caputti.—p. 285.

Interpreting the bland diet prescription. B. Rothman.—p. 295.

Mineral and Vitamin Content of Human Colostrum. In a study of 229 cases, it was found that diet during pregnancy does not appear to have an appreciable effect on the vitamin A content of human colostrum, but that there is a relation between the amount of calcium, phosphorus, iron, thiamin, flavin, and vitamin C in the diet and in the colostrum.

Vitamin Content of Human Colostrum. The vitamin content of 33 samples of mixtures of colostrum taken from 228 subjects during the first 5 postpartum days was found to be very variable. No appreciable amount of vitamin K was found. Colostrum is richer in vitamin A during the first days, but the thiamin, flavin, and ascorbic acid content remains practically constant. Colostrum, like milk, contains very small amounts of nicotinic acid.

Vitamins in Cooked Milk. Boiling did not change the lactoflavin and nicotinic acid content of milk. Thiamin loss was so slight as to be negligible.

Food Rationing in France. A report on malnutrition in France by Dr. Ramon F. Mirioli was received from the Argentine Embassy in Vichy, January 1942. Rationed items were milk, cheese, chocolate, meat, edible fats, bread, edible pastes, flour, and sugar. Other items not rationed were not always available because of delivery difficulties, high prices, and black market activities. Individuals were placed in 9 groups based on age, pregnancy and lactation, and type of work. Different cards were issued to each group. It is concluded that the quota for infants up to 3 years was sufficient except for iron and vitamins; for children 4 to 6 only the protein, calcium and phosphorus requirements were met; and beyond this the quotas were insufficient in fats, proteins, minerals and vitamins, as well as in calories. The French Food Rationing Commission announced that the quotas were not expected to be nutritionally adequate, and conducted a campaign to educate consumers in the use of what supplementary foods were obtainable. Horse meat, birds, rabbits, viscera, fish, potatoes, fruits (unpeeled), casein, dried blood, soy, sunflower, and peanut flours, oils from the seeds of tomatoes, grapes, and other fruits, malt extract, and fruit preserved without sugar, were all suggested. The Commission recommended that butter be reserved for children and described methods for retaining the original vitamin content of foods. Rothman believes that, due to the difficulties of securing supplementary foods, the population as a whole has been suffering from serious nutritional deficiencies.

Alfalfa in Human Nutrition. Alfalfa came from the Orient to Greece in the time of Alexander the Great. Eventually it became known throughout Europe and America. It has high nutritional value, but is not recommended for children, due to high cellulose content; 50 gm. furnishes a protective addition to the diet.

Preparation of Alfalfa Dishes. Use only the fresh green leaves. Place in boiling water 3 to 5 min. to remove strong taste. Steaming reduces vitamin loss, but greens may be boiled 10 min. in very small amount of water. Formulas are given for purée, omelet, cream soup, soufflé, croquettes, pudding, and creamed alfalfa.

Argentine Diet—1750. A recently translated treatise by the Jesuit missionary, Florian Paucke, reveals that in the 1750's the daily diet of rural Argentines consisted of 12 lb. meat, water, and maté.

Gout. Gout is not thoroughly understood, but may be compared with diabetes since tendency is inherited and faulty metabolism is involved. Observations over a period of years have shown that the patient with gout is able to metabolize a definite quantity of purines, and can usually metabolize the endogenous purines. It is therefore recommended that a hypopurine diet, rather than one entirely lacking in purines, be prescribed. In Argentina 60% of the normal diet is in the form of animal protein, but it usually contains no more than 7.6 mg. purines per 100 calories. The disease, as evidenced by tophi, is not common in Argentine hospitals.

"Normal Calories." "Normal calories" (those provided by a meal which meets nutritional requirements) for a child differ from those for an adult. In Buenos Aires 1000 normal calories cost about 19 centavos ($4\frac{3}{4}$ cents) for a laborer; 23 centavos ($5\frac{3}{4}$ cents) for a child of 5; and the average cost for a family is 20 centavos. For a family of 2 adults and 3 children the minimum would be 2 pesos and 40 centavos (about 61 cents in U. S. currency).

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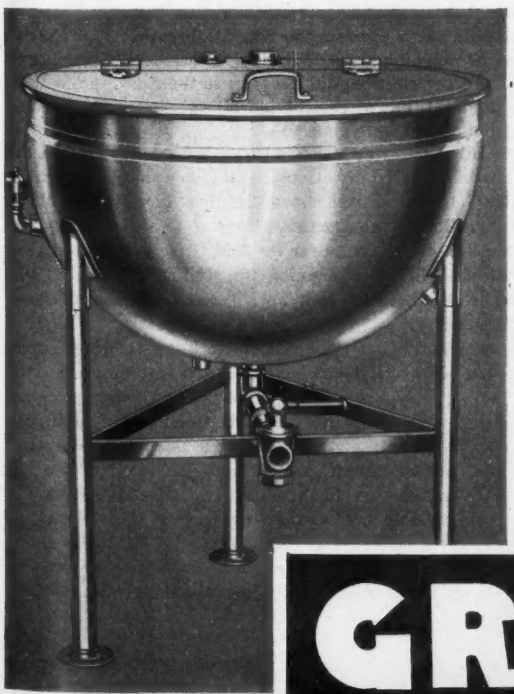

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Mesquite. Mesquite (*prosopis*) beans mashed in milk (*añape*) or fermented in water (*aloja*) or ground into flour and made into cakes (*patay*) are staple foods in various Argentine provinces. Chemical analysis showed *patay* to be a good source of calcium, thiamin, riboflavin, but lacking in vitamin A, nicotinic acid, and ascorbic acid.

Institution Diet. Fifty establishments of various types were studied: boarding schools, kindergartens, school lunchrooms, "vacation colonies" or camps, asylums, industrial dining rooms, etc. Questionnaires sent out dealt with the type of group served, methods of selecting, buying and storing food, type and variety of meals, personnel in charge of preparation and service, kitchen and dining room equipment, and system of distribution. The total caloric value was variable, usually high in carbohydrates, low in fats, and frequently high in protein. Protective foods and milk were notably lacking, and in no case were properly trained personnel in charge.

Acidified Milk. "Acidified milk" is not the product of bacterial action, but is obtained by adding to milk sufficient acid to bring the *p*H to the isoelectric point of the casein. The casein is precipitated, and the acid condition of the milk has an inhibitory effect on the development of putrefactive bacteria; 70 cc. lemon juice per liter boiled milk precipitated the casein, but had no inhibitory effect on bacterial development at room temperature; 4 cc. lactic acid (density 1.21) per liter boiled milk precipitated casein but had no antibacterial effect at a temperature of 28°C.; 5 to 6 cc. lactic acid (density 1.21) per liter boiled milk precipitated the casein and practically assured the preservation of milk for 24 hr. under sanitary conditions at room temperature. It is advisable to use at least 5 cc. lactic acid (density 1.21) per liter boiled milk and keep it in a cool place no longer than 24 hr.

Kindergarten Diet. The "Mitre" kindergarten, housed in the former executive mansion, Buenos Aires, serves poor children between the ages of 4 and 6. Only 90% of the caloric requirement can be furnished during the time the children are at the kindergarten, 60% of which is in the form of protective foods while the remaining 10% is supplied at home. Tables show the values of diets furnished from 1939–41.

SCIENCE

Vol. 100, July 21, 1944

*The correlation of the insulin content and the histological picture of the pancreas at intervals after the administration of alloxan. J. H. Ridout, A. W. Ham and G. A. Wrenshall.—p. 58.

*Corn oil and butterfat essentially equal in growth-promoting value. L. P. Zialcita, Jr., and H. H. Mitchell.—p. 60.

Alloxan and Insulin. These experiments indicate that alloxan causes hypoglycemia because it kills islet cells and so allows their insulin content to be leached out into the blood stream. It appears most unlikely that it exerts its hypoglycemic effect by stimulating islet cell secretion because most of the islet cells are dead when the hypoglycemic phase occurs.

Growth-Promoting Value of Corn Oil and Butter Fat. These studies indicate that, apart from differences in vitamin content, corn oil and butter fat are essentially equal in growth-promoting value for the rat.

"K" RATIONS FOR BABIES

Last summer Khaki worked for the Children's Bureau in Washington on preliminary plans for the health and welfare of women and children in areas to be liberated from Nazi aggression. One of her particular concerns was the problem of feeding children. Khaki became convinced that it would be unrealistic to attempt to impose American dietary standards on children in the Balkan countries, for example; they would neither be accustomed to our diet nor would the ingredients of it be available. We have been brought up to believe that milk is the only perfect food for infants, but milk will not flow into civilian areas in the wake of retreating armies. The chances are that all of the regular means for the production and distribution of food will be at a temporary standstill.

It occurred to Khaki that the only food immediately available would be that in the possession of the occupying army. She had seen a news reel in which American soldiers were handing out their rations to clamoring civilians. This gave her an idea. Could United States Army combat rations be adapted to the needs and tastes of small children?

With the backing of the Children's Bureau she obtained from the Quartermaster Corps samples of the different rations supplied our soldiers, along with their nutritional analyses. The problem was to select from among these the constituents suitable for feeding infants and small children and to discover methods by which they could be reduced to a consistency that children would eat. Could the constituents of milk be found and if so could they be put in solution? With her rations, Khaki retired to a kitchen stove.

The cheese found in "K" rations was the logical starting point. To her joy it went into solution in hot water and, when cooled, did not get stringy like welch rarebit [*sic*]. Moreover, it tasted good. The "K" ration biscuit softened in water replaced the dextrimaltose or sugar which goes into a baby's formula. The two combined in a baby's bottle (with nipple hole slightly enlarged) made a perfectly good milk substitute for infants. For slightly older infants, the fruit bar chopped up and cooked made excellent stewed fruit. More of the biscuits softened in hot water provided cereal. Khaki also worked on items selected from the "C" and other combat rations with satisfactory results.

The next step was to see if babies would take these foods. The rations were taken to Bellevue Hospital in New York and prepared by the formula nurse according to Khaki's directions. A baby of 2 or 3 months weighing about 18 lb. took to her bottle like duck to water. The older children did not take to their new fare with as much enthusiasm, but after a period of starvation (a technique familiar to mothers) were glad to get it.

The remaining step was to make these findings available to the Army. Khaki prepared directions in language simple enough for the average G.I. Joe. It was hoped that these directions would be sent to the various combat zones. They were sent to the Civil Affairs Division of the Army for its A.M.G. schools where they were to be used in their planning for civilian feeding. Early in September 1943, both the New York *Times* and *Herald Tribune* carried stories describing Khaki's work.

At the present time, it is impossible to know to what extent (if any) these ideas of Khaki's have been put into practice. We do know from a newspaper account that the first baby born after the occupation of Sicily was named "K-Ration Tessie" by United States Army nurses. It is conceivable that this was because the baby derived her first nourishment from Khaki's "K" ration formula. Perhaps in her forthcoming trip, Khaki herself will have the fun of finding more positive evidence of the value of her work.—*As told to Eleanor Dodge Child by Lt. Col. Katharine Dodge ("Khaki"), U. S. Public Health Service, as she packed for overseas, and reported in the Vassar Alumnae Magazine, June 1944.*

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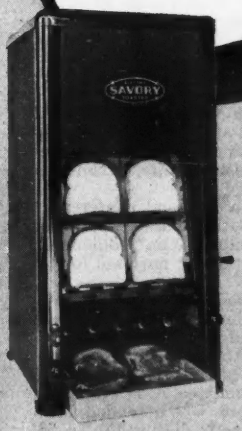

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News Notes

Correction. A typographical error appeared under this section for September. The correct dates of the American Dietetic Association Annual Meeting, Palmer House, Chicago, are October 25–27, *not* October 27–29.

British Dietetic Association. The Annual General Meeting was held in London, April 1, according to the *Newsletter* of the association. An informal discussion on "The Place of the Dietitian in the Post-War World" led by Dorothy F. Hollingsworth, secretary of the association, covered "The Dietitian in School Meals' Service," "The Dietitian in the Hospital," "The Dietitian in Industry," "The Dietitian in a Government Department," and "The Dietitian in the Services." It was reported that the association had been registered with the Board of Medical Auxiliaries and that 98 of the 271 full members had registered in the Dietitians' Register. A representative of the association was appointed to the Council of the Board, and the association had received a request from the Board for suggestions as to the place of the dietitian in the new Health Services, which were to be submitted to a special committee who would consider the form in which representation should be made to the Minister of Health for the incorporation of the work of medical auxiliaries in the White Paper on the new Health Services. A subcommittee had also drawn up a salary scale for hospital dietitians to serve as a basis for recommendation to employing bodies. Negotiations had been carried on with the Ministry of Labour and a memorandum drawn up concerning dietitians, for the use of the Ministry of Labour appointments officers. A questionnaire had been sent out previously to gather statistics on the present and possible future work of dietitians. The association meets quarterly, and regional meetings are held monthly in London and less frequently in other parts of England and in Scotland. The association was represented on the Council of British Societies for Relief Abroad, a conference of the Nutrition Society on the formation of a Bureau for Education in Nutrition, and the Women's Employment Federation Conference on Careers, during the year.

Elspeth M. Averill, chairman of the executive committee, in her closing remarks, said: "Summing up the important points which have come up in the talks and discussions, it is apparent that the association feels that all dietitians should be practised buyers, good administrators, and practised in large-scale catering. We also recognize the importance of close cooperation of the dietitian with doctors, matrons, cooks and works' managers, for the smooth running of a department, and the importance of attractiveness and palatability of food, if patients and workers are to be taught to eat foods of high nutritional value. In conclusion, I should like to bring to your notice another way in which the dietitian can take her place in the present and postwar world—this time in a non-professional capacity—and this is the matter of influencing public opinion about food matters. . . . At a Ministry of Food conference held early this year, the Minister replied to criticism from press representatives who maintained that the increased shipping space now available should be used for imports, by reminding the press that part of this space is required for non-food items, and that it is not our policy to plunder the liberated countries. I feel that it is our duty as trained people who know that this country is being reasonably and adequately fed, and by comparison with almost any country in Europe, handsomely fed."

Revised Dietitian's Aide Course. Copies of the "Instructor's Outline for the Dietitian's Aide Course," revised June 1944, and "Instructions for Chapter Organization and Administration of Red Cross Volunteer Dietitian's Aide Corps," also revised in June, were received at the JOURNAL office August 18. It is assumed that both have been distributed to local Red Cross chapters.

Schools for Food Handlers. According to the *Consumers' Guide*, August, the U. S. Public Health Service, as part of its campaign to establish and enforce high sanitary standards in all public eating places, is urging that schools for food handlers be conducted in towns throughout the country. Since it does not have the personnel nor the funds to conduct these, its aim is to conduct one or two in every state which requests them—the object being to stimulate other towns to give their own courses. Every effort will be made to keep the instruction simple and practical, and movies, slides, demonstrations, and talks followed by true-and-false quizzes are the means employed. The U. S. Public Health Service also helps to conduct restaurant sanitation seminars for state and local public health officers. At these meetings methods of teaching cooks and dishwashers the fine points about food handling will be demonstrated. It is suggested that in communities where there is no adequate sanitary program, the public can, individually and through civic organizations, support the health department in obtaining the adoption of a code, along the lines recommended in *U. S. Public Health Bulletin No. 280*, and adequate appropriations for its enforcement.

Industrial Feeding. About 5,000,000 workers in approximately half of the U. S. manufacturing plants engaged in war work can now obtain mid-shift meals on the job, according to a nation-wide survey covering 2506 representative manufacturing plants, reported by WFA. Another half million in other manufacturing industries also have access to food on the job. New food services and expansion of existing facilities now being planned will provide in-plant food service for one and a half million additional workers, WFA estimated. Eighty-one per cent of workers employed in war plants have the benefit of some type of food service facilities. It was pointed out that need for further expansion is shown by the fact that actually only 30% of the workers in these plants are obtaining mid-shift meals. According to the survey, 91% of plants having more than 2500 workers and 80% of plants employing 1000 to 2499 now have some type of in-plant feeding facilities. In smaller plants, however, only 28% have food services. The large plants also show the highest percentage in the groups planning new installations and expansions. Returns from large plants in shipbuilding, aircraft, and other essential war industries showed that although 91% of the large shipyards have some type of food service, only 35% of their workers are being served mid-shift meals. In the aircraft industry, 97% of the large plants have facilities, and 68% of the workers are being served.

War Manpower Commission Labor Market Classifications. A release of the War Manpower Commission, August 1, (WMC 3406-7) gives classifications according to labor supply status (*see* p. 162 this JOURNAL for March 1944) of all industrial cities and towns in the United States, as of that date.

Food for Freedom. A work progress report to July 1944 has been issued by the Board of Directors of Food for Freedom, Inc., 1707 H Street, N.W., Washington 6, D. C. Among the listed publications of the organization are: "Millions Must Eat," a leaflet about the Food for Freedom program, September 1943 (presumably free); and "What the United Nations Relief Program Means to You," by William Allan Neilson and Raymond Gram Swing, including decisions reached at the first council session, Atlantic City, November 10–December 1, 1943, and recommendations of Congress, revised April 1944 (5 cents a copy, 25 cents per dozen, $1 per 100).

The Board has proposed that a national conference be held in Washington this year to cover both domestic and international food problems, but with greater emphasis on problems of foreign relief, stockpiling, and the relation of our national food policy to the world food situation.

School Lunches. Since the School Lunch Program Bill failed to pass the previous session of Congress (the appropriation of $50,000,000 for one year, mentioned in this JOURNAL for September, passed as an amendment to the Agriculture Appropriation Bill), another bill is to be presented this fall, according to Alice E. Jané, chairman, Legislative Committee, A. D. A., and dietitian, Union Memorial Hospital, Baltimore, who attended a meeting at the U. S. Office of Education in June to discuss the proposed bill. When a new bill has been drafted, it will be considered by the Legislative Committee of the Women's Joint Congressional Committee.

At the School Lunch Planning Conference, Washington, July 21–22, Miss Jané represented the A. D. A. An official statement in regard to the A. H. E. A.'s school lunch policy was drawn up during the meeting and approved by the executive board of that association.

Data concerning school lunch provisions in the various states are included in a publication (School Lunch Misc. 2) of the U. S. Office of Education, Federal Security Agency, Washington 25.

The March issue of *The Journal of School Health* was entirely devoted to the subject of nutrition. Brief articles were contributed by representatives of WFA, U. S. Public Health Service, Children's Bureau of the U. S. Department of Labor, U. S. Office of Education, and USDA.

Health Education in Secondary Schools. A resolution presented to the House of Delegates at the 1944 session of the American Medical Association read in part as follows: "Whereas, The Office of Education, with the assistance of representatives from the U. S. Public Health Service, the Children's Bureau, representatives of the armed forces and others, has prepared a suggested program of health education entitled 'Physical Fitness Through Health Education'. . . . therefore be it resolved, that the Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association endorses the recommendation of the Office of Education that

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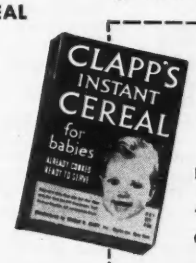

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schools throughout the country provide programs of health education for all secondary school students, adapting the suggestions contained in 'Physical Fitness Through Health Education' to the particular needs and problems of their students and community; and that the Joint Committee urges that school administrators provide sufficient allotments of time to permit an integrated health education program that includes such topics as accident prevention, nutrition, disease prevention, first aid, functioning of the human body, community hygiene, correction of remedial defects, the dangers of self medication, and the use of professional health services." Further resolutions recommended that high school students be better prepared in all aspects of general biology and have a "basic understanding of the essential physiologic processes (metabolism, nutrition, respiration, elimination, conduction of stimuli and response to stimuli)."

Fellowships for Health Education. Through the cooperation of the National Foundation for Infantile Paralysis and the W. K. Kellogg Foundation, additional fellowships for health education were recently made available by the U. S. Public Health Service, as reported by the *Journal* of the American Medical Association for July 29. Women between the ages of 19 and 40 were invited to apply. Candidates were required to have a skilful knowledge of the use of the English language, courses in the physical and biologic sciences, social sciences, education and educational psychology, plus the ability to work effectively with people. The fellowships, which are to lead to a master of science degree in public health, provide for 12 months' training in public health education, 3 months of which would be supervised field experience, $100 a month for 12 months, full tuition and travel. The filing of applications terminated August 15.

Nutrition Program Materials. Copies of the August 5 and 12 issues of *Home Economics Bulletin*, prepared by Betty Brownell for the National Association of Food Chains, 726 Jackson Place, Washington 6, D. C., have been received. This publication gives suggestions for the use of certain plentiful and point-free foods, including recipes.

An unusually attractive and dramatic presentation of the principles of good nutrition is contained in "Nutrition Guide," published by General Mills, Inc., Minneapolis. Colored illustrations and graphic representation of the facts are used throughout, including some excellent pictorial illustrations of comparative methods of cooking which conserve, as well as those that waste, minerals and vitamins. Single copies of the booklet will be supplied on request. A wall chart of vitamin and mineral information, published by the same company, is also available.

Nutrition Conference. The Third Annual Conference on Conservation, Nutrition and Human Health was held at the Conservation Laboratory, Conotton, Ohio, June 24–25. Among the speakers were: Dr. Charles A. Doan, Columbus, "The Role of Iron in Nutrition"; Dr. Julian D. Boyd, Iowa City, "Your Teeth and Your Diet"; Dr. William A. Allbrecht, Columbia, Mo., "Soil Fertility and National Nutrition"; Dr. John D. Detwilder, London, Ontario, "Canada's Major Conservation Problems"; and Dr. Jonathan Forman, Columbus, "Current Thinking on Nutrition."

National Restaurant Association. The association has provided three fellowships of $1000 each and four scholarships of $500 each for the year 1944–45, to be awarded on the basis of high scholastic standing and need, with special consideration given to those with experience in restaurants or recommended by members of the industry. The fellowships will be given to men and women who have received an A.B. or B.S. degree from a recognized college or university and are registered in the final year of the Restaurant Administration Program; the scholarships, to those in the Restaurant Administration Program who show evidence of high scholastic ability. Applications for fellowships or scholarships should be sent to the Director of the Restaurant Administration Program, School of Business, University of Chicago, Chicago 37, or the National Restaurant Association, 8 S. Michigan Avenue, Chicago 3.

The National Restaurant Association is cooperating with the U. S. Department of Commerce in writing a manual, *The Restaurant Business*, to be one of 35 manuals prepared by the Department of Commerce at the Army's request, and to be studied by the armed forces on foreign soil between the time the armistice is signed and demobilization takes place, in order to "form definite ideas about the field they wish to enter upon return to this country." Dr. Mary deGarmo Bryan, Teachers College, Columbia University, has been asked to contribute to the manual and to assemble it.

A research project on "Human Relations in the Restaurant Industry," sponsored by the association, is being launched coincidentally with the Restaurant Administration Program, with Dr. William Foote Whyte as director of the project.

The tentative program of the association's Third Wartime Conference, Stevens Hotel, Chicago, October 10–12, includes: "Research in the Food Industry," Neil H. Jacoby, secretary of the University of Chicago; "Food Forecast, Human Relations in Industry, and Research and Education," University of Chicago panel; a lecture and demonstration on cutting, cooking, and carving meat by Jessie Alice Cline and M. O. Cullen, National Live Stock and Meat Board; and a forum on "Sanitation and Safety" led by Dr. Mary deGarmo Bryan.

National Vitamin Foundation. At a meeting in New York, May 23, attended by 50 representatives of all sections of the vitamin industry, the organization of a National Vitamin Foundation was planned, the objectives of which would be: the awarding of grants for research in the vitamins or related fields, the dissemination of information to the vitamin trade, medical profession, and public with respect to the quality, purpose, and uses of vitamins, adoption of terminology and standards of publicity practices in connection with the sale of vitamins, and to confer and consult with medical societies, medical schools, health organizations, public health agencies and government agencies with respect to vitamins and the vitamin industry. The foundation would be administered by a board of trustees. Basil O'Connor, president of the National Foundation for Infantile Paralysis, is chairman of a committee which will formulate details of the organization.

Report of Baruch Committee on Physical Medicine. This report, recently published, states that there is a definite shortage of physicians trained in physical medicine who would be capable of directing rehabilitation services, as well as an acute shortage of physical therapy and occupational therapy technicians. Recommendations are made concerning the needs for proper development of physical medicine, such as organization of a central office, establishment of teaching and research centers in physical medicine, promotion of wartime and postwar physical rehabilitation, etc. No mention is made in the printed report as to where copies may be obtained.

Research Grants. Among those announced by the New York Academy of Medicine as awarded through fellowships provided by Charles Mayer of New York are: Dr. Harry Goldblatt, Western Reserve University, for work on "use of choline and other lipotropic factors in the prevention and treatment of fatty infiltration of the liver and hepatic insufficiency"; Dr. Richard Lewisohn, Mount Sinai Hospital, for work on "action of ingested choline, lecithin, methionine, and inositol on precancerous lesions and disorders associated with neoplastic diseases"; Dr. John R. Murlin, University of Rochester, for research on "effects of riboflavin, certain amino acids, and casein on the development and growth of cancer."

The Sugar Research Foundation has announced grants totaling $104,100 for studies on various phases of sugar research, to: Dr. Ancel B. Keys, University of Minnesota; Dr. Julian D. Boyd, University of Iowa; Dr. Fredrick J. Stare, and Alfred Le Roy Johnson, Harvard University; Melville L. Wolfrom, Ohio State University; and Professor Carl A. Neuberg, New York University.

Rationing and Price Control. In an emergency action taken to keep retailers' stocks from running out, OPA restored point values to canned corn July 30. Point values on grape jam, tomato preserves and tomato marmalades were reduced to zero.

Supplementary Order No. 94, effective September 1, gives broad methods of price control for sales by the Government of all commodities except food and is designed particularly to cover the disposal of vast quantities of material, including both new and used commodities, by the Government in the reconversion period. The new order seeks to keep prices within stabilization limits. A similar order covers sales of food by the Government, according to OPA.

Ceiling prices, announced by OPA in August, for asparagus and red sour pitted cherries, will result in retail prices approximately the same as those for the 1943 pack; for spinach, about 1 cent higher for a No. 2 can.

Mrs. Esther Cole Franklin, formerly member of the Women's Advisory Committee to the War Manpower Commission and of the Consumer Advisory Committee, OPA, has been appointed Consumer Relations Adviser, OPA, by Chester Bowles, administrator.

An action by OPA, effective August 3, increased the retail price of dry edible beans approximately 5%. Prices of split peas remain the same.

Maximum prices on cabbage will, on the average, result in no upward revision of retail ceilings.

Maximum prices, effective August 16, for the 1944 apple crop were expected to result in a national average price to consumers of approximately 10½ cents per pound, compared with 10½ cents last year.

Slightly higher prices for fresh beets to growers may be reflected in higher retail prices to consumers. Potato prices to consumers should not show any change.

Retail prices for canned peas will be at the same level as last year. This is being accomplished by subsidies to food processors.

Effective August 23, maximum prices for the 1944 California pack of canned apricots are lower than last year's ceilings. At retail, the difference amounts to from 1 to 1½ cents per No. 2½ can of choice apricots.

A customer-grocer educational campaign designed to make definite ceiling price information available to more consumers was announced jointly by OPA and leading food trade associations August 21. Scheduled to continue through December, the pro-

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• I brewed and I brewed about not being clean, even after being washed. And now they're doing something about it. I had a Wyandotte bath today!

Sure way to boost your dishes' self-respect is to use a Wyandotte dishwashing compound. There's one to suit every dishwashing method — every water supply.

For dishwashing by machine, Wyandotte Keego* teams up with soft or hard water to bring dishes, glassware, silverware out of the bath brilliantly clean — without streaks or stains.

Wyandotte G.L.X., for washing by hand or by machine, is the modern sudsy but soapless cleaner that contains a synthetic organic detergent. It forms a perfect union between the cleaning solution and the surface being washed to lift off stubborn soil in a jiffy. G.L.X. rinses so freely that you seldom need to towel dishes.

And for a hand dishwasher that makes suds and *does* contain soap, Wyandotte H.D.C. fills the bill. It's a good performer in water of any degree of hardness.

The Wyandotte Representative will be glad to go over your dishwashing problems with you and help you pick a cleaner for your particular job. Why not consult him today?

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gram provides for improved multiple posting, in plain view, of ceiling price lists in stores; a trade-sponsored campaign of local advertising and store displays urging housewives to discuss ceiling prices openly with merchants; more general consumer checking of prices in stores; making available to consumers 1,500,000 copies of each of four price lists for dry groceries and meats by local War Price and Rationing Boards; prompt reports to local board price panels in cases of uncorrected or repeated violations of price regulations; and increased enlistment, training, and more frequent store visits of price assistants, who help merchants keep their prices posted correctly and keep local boards informed concerning retailers' compliance with the price and posting regulations.

Price changes to processors for California grape wine will substantially reduce the level of prices to the consumer.

Consumer prices on Swiss cheese have been reduced by an average of approximately 3 cents a pound.

The ration value of 16 red points per pound for creamery butter was maintained in the schedule for point values effective September 3, instead of 20 points as previously predicted. OPA states that later reports indicated that consumption by civilians would not exceed the allocation.

New ceilings, effective August 28, on the 1944 pack of canned sweet cherries, are about 2½ cents higher than last year for No. 2½ cans, choice grade.

Authority for all retailers of meat to pre-cube steaks from top or bottom rounds of utility and cutter and canner grades of beef was granted August 29 by OPA. This measure, effective September 4, was taken because of the large supply of these grades of meat and the desire to find a way of retailing them in a form acceptable to the consumer. Retailers are still prohibited from pre-cubing better grades of meat. A single price has been fixed for the two grades of pre-cubed steaks authorized.

The action also authorizes retailers to keep their meat grinders under refrigeration provided they post a notice to the effect that any purchaser may observe the grinding. Retailers are authorized to apply to district OPA offices for permission to fill telephone orders for ground, boned, rolled, or cubed meats. They must, however, comply with certain rules intended to safeguard the consumer; namely, they must not show, sell, or divert the prepared meat to anyone other than the purchaser ordering it; meat must be wrapped immediately following the preparation and the wrapper marked to show all pertinent facts concerning contents of the package; such meat must not be prepared in advance or in anticipation of orders, and no additional charge may be made for special preparation or delivery.

National Food Situation. A chart reproduced in the July *National Food Situation* of USDA shows that although the per capita consumption of foods (1909–44) in terms of pounds tends to remain fairly stable, the index of consumption weighted by the average retail prices of foods since 1935 showed an upward trend, and reached a peak in 1941. This fact is accounted for by the shift from cheaper foods, such as potatoes and grain products, to the more expensive types, such as dairy products, fruits, and vegetables. The nutritional analysis of the national average diet indicates that a general improvement in the nutritive content has accompanied these shifts. The data presented in the chart do not include the estimated production of vegetables in city victory gardens. It is stated that if such production were included, the weighted index would be even higher in both 1943 and 1944, which would indicate that per capita consumption in 1944 may equal the all-time record of 1941.

The volume of agricultural production of foods for sale and farm home use in 1944 is expected to be 38% above the 1935–39 average and almost 5% larger than last year. Most of this increase over 1943 is in food grains—principally wheat, and in fruits, truck crops, and meats. Lard production for 1944–45 (year beginning October) is expected to fall off markedly, of other fats and oils, below that of 1943–44.

Milk production on farms during the last half of 1944 probably will about equal that produced in the same period of 1943. Expected shifts in utilization, however, probably will result in increased supplies of certain dairy products and decreased supplies of others, notably butter. Since 1941 both creamery and farm butter production has been declining, according to the *Dairy Situation*. Strong consumer demand near the points of production, together with reduced supplies, has tended to keep a larger-than-usual proportion of the commodity close to the locality where produced. Production of other manufactured dairy products, principally evaporated milk and American cheese, may run ahead of 1943, although heavy lend-lease and military requirements will leave less available for civilians than in the last half of 1943. The expected increase in production of American cheese should result in slightly larger supplies for civilians. Production of nonfat dry milk solids and dry whole milk will reach new high levels. Civilian per capita consumption of fluid milk, fluid cream, and milk by-products probably will be about the same as that during July–December 1943. Consumption of butter, both farm and factory, possibly will be the lowest for a similar period in over half a century.

As of August 5, manufacturers of frozen dairy foods are not restricted under WFO 8 in the use of milk solids-not-fat in ice cream so long as the total quantity of milk solids they use does not exceed 22%.

Packers of cucumber pickles and cucumber pickle products must contract to sell 40% to the Army before making other sales, compared with 25% last year.

Output of both beef and veal is expected to be considerably larger this year than last. The fall pig crop is indicated to be the smallest since 1940. Although hog slaughter in 1944 may total 100 million head, exceeding last year's by about 5 million, pork output may be slightly smaller because of lighter weights of hogs. Output of lamb and mutton may be about 10% smaller this year than last. Crop indications point to larger feed-grain supplies in relation to livestock numbers this fall and winter than last.

Under the provisions of WFO 75.3, effective August 27, meat packers operating under federal inspection are required to set aside for government procurement specific percentages of each week's production of certain cuts of pork. The order will not materially change the amount of meat available to civilians, according to WFA. A companion order requires beef to be set aside for the armed forces.

The *Cold Storage Report*, August 15, states that stocks of shell eggs in cold storage were reduced considerably during July, as were holdings of cured meats and lard. However, cheese, dried eggs, and dried fruits were accumulated. All items with the exception of butter were greatly in excess of August 1, 1943 and the August 1 average for 1939–43.

WFA has made arrangements with the government of Spain for the exportation of 3000 tons of olive oil to the United States, to be purchased through regular trade channels by private interests.

Packers will continue to set aside packs of dried apples, apricots, peaches, pears, prunes, raisins, and Zante currants for government purchase during the 1944–45 marketing season, in essentially the same proportion as during the previous year. A new provision authorizes WFA's director of distribution to issue specifications for the processing and packaging of dried fruit released for sale in civilian trade channels, in order to prevent the diversion of those fruits to nonfood outlets.

Effective August 1, soluble coffee manufacturers were required to set aside all current inventories and 100% of subsequent production of soluble coffee to fulfil requirements of the armed forces and other government agencies. This action does not affect the roasted coffee industry. It will remain in effect until the set-aside stocks are sufficient to assure necessary quantities for the above.

U. S. civilians are expected to receive slightly more canned fish during the 1944–45 pack year than for 1943–44. It is estimated that the available supply of fresh and frozen fish will be slightly more than for 1943–44.

Dehydrated Foods. An article in the July *Marketing and Transportation Situation*, USDA, reports the results of a consumer reaction survey, to determine probable consumer acceptance of dehydrated foods, made in Chicago by the Bureau of Agricultural Economics. Dehydrated products were distributed to housewives, and BHNHE furnished recipes. A number of private firms and organizations cooperated in the study. Acceptance was expressed as percentages of housewives willing to buy the following dehydrated foods: cranberries 88%, eggs 75%, sweet potatoes 71%, beets 64%, milk 62%, carrots 61%, diced potatoes 58%, and riced potatoes 55%. The percentages represent the total of those willing to buy the dehydrated product at a price either less than, equal to, or more than the price of the fresh product, assuming that both are available. Comment accompanying the presentation of these figures states that results of the survey must be viewed as unduly favorable because of factors conducive to an upward bias, such as the fact that the products were given rather than purchased, that it was impossible to avoid informing consumers that they were participating in an experiment, and that many did not have fresh or canned products of the same type with which to make direct comparisons. "The real significance of the results of this investigation," it is stated, "is that a large proportion of housewives do not appear to be definitely prejudiced against dehydrated foods and are willing to consider them with competitive foods when making purchases."

Margarine. In testimony before the subcommittee of the Senate Committee on Agriculture and Forestry, on S-1744, the bill that would remove some of the restrictions and regulations on margarine so that it may be sold colored, a representative of the National Association of Margarine Manufacturers explained that were margarine manufacturers not forced, by law, to bleach out the natural color in the oils going into margarine, the product would be naturally yellow, not white. It costs one quarter cent per pound to bleach the oil to make margarine artificially white and at the same time carotene is removed. The witness stated that last year 430,000,000 lb. uncolored margarine had to be colored by consumers and that through loss of fat adhering to mixing bowls and spoons, 1,000,000 lb. was wasted. Coloring by the manufacturer would result in no extra cost to the consumer. At the same hearing, Dr. Anton J. Carlson discussed the nutritional value of

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REDUCES SHRINKAGE! **EXTENDO** *EXTENDS MEAT 100%!*

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USUAL MEAT LOAF

Ingredients:

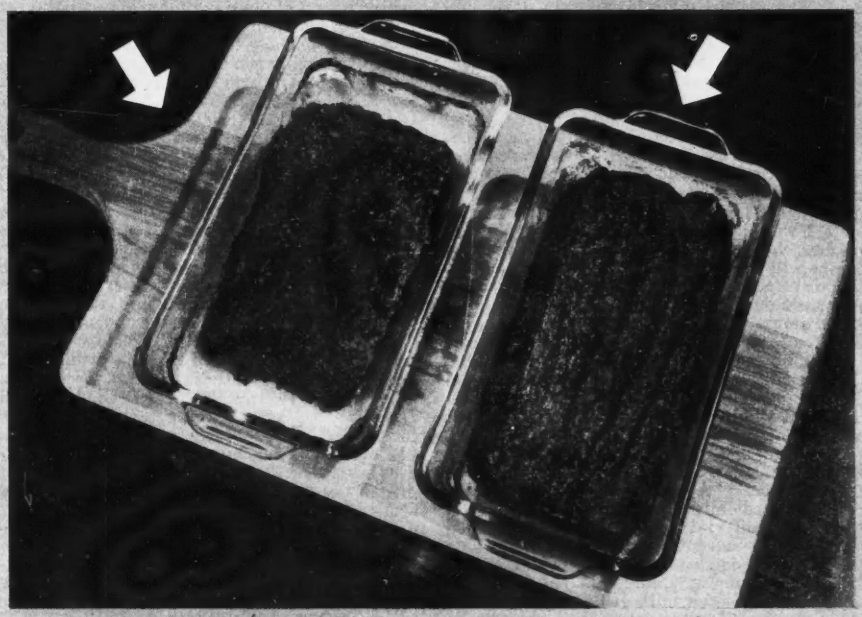
1¼ lbs. ground beef
1 oz. (1 c.) bread crumbs
2½ oz. (⅓ c.) liquid
½ oz. (2 tb.) chopped onion
⅛ tsp. poultry seasoning
1 egg (1½ oz.)

EXTENDO MEAT LOAF

Ingredients:

¾ lb. ground beef
¼ lb. EXTENDO
½ lb. liquid
½ oz. (2 tb.) chopped onion
⅛ tsp. poultry seasoning
1 egg (1½ oz.)

Bake 350° F.—1 Hour



Total Raw Weight	25½ oz.
Total Cooked Weight	18 oz.
Total Shrinkage	7½ oz.

Total Raw Weight	26 oz.
Total Cooked Weight	23 oz.
Total Shrinkage	3 oz.

EXTENDO is a nutritious meat extender that provides approximately the same essential amino acids, minerals and vitamins at a level found in meat.

EXTENDO is available in 25-lb. bags at 22½¢ per lb., f. o. b. New York.

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margarine, which he stated to be the same as that of butter. He said that in England margarine manufacturers use skim milk in the manufacture of the product. "It is a superstition," he stated, "that the main value of milk is the fat it contains. We don't realize that the protein in milk is skimmed off and washed out of the butter and that minerals are washed out at the same time."

Frozen Tomatoes. Tomatoes, one of the problem foods for preservation by freezing, may yet take their place in freezer lockers along with other fruits and vegetables, according to USDA's *Food and Home Notes*, August 7. Tests at the Pennsylvania Experiment Station show that tomatoes individually wrapped in cellophane and frozen unblanched in air at −40° F. or frozen in brine at −30° F. keep well, and, when partly thawed, have all the flavor of fresh tomato ice. The skin of the tomato bursts evenly in a ring around the widest part of the tomato and peels off evenly. After freezing, tomatoes cannot be sliced because the flesh loses firmness, but they are suitable for serving in any other way.

Velva Fruit. Directions for making this new frozen fruit dessert, developed at the Western Regional Research Laboratory of USDA, are contained in the July 31 issue of *Food and Home Notes*. Berries of several kinds, cherries, red plums, cantaloups, peaches and apricots may be used. Mellow ripe fruit, too soft for canning, is ideal. Wash fruit, remove pits, crush and force through sieve or potato ricer. Save and use all juice. Apricots and peaches should be halved and placed in boiling dilute sugar syrup (10%) 5 min. before sieving. When tart fruit like berries or plums is used, ingredients are: 3 cups sieved fruit; 1½ cups sugar; 1 tbsp. plain gelatin; ¼ tsp. salt. When less acid fruit like peaches, cantaloups or apricots is used, only 1 cup sugar is needed, but ⅓ cup lemon juice is added. Mix together and keep mixture cold while softening gelatin in cold water and dissolving by heating 5 min. over boiling water. Stir dissolved gelatin into fruit-sugar mixture. Rapid freezing gives smoother texture. In hand freezer, use 1 part salt to 8 parts ice. The mixture takes 15 or 20 min. of turning to freeze. Remove dasher and pack to harden, using 3 parts ice to 1 part salt. In refrigerator trays, leave mixture to freeze overnight. Remove in morning, break into small chunks with spoon, whip smooth in chilled bowl with egg beater, and return to refrigerator for final freezing. One quart of the mixture freezes to about 1½ qt. velva fruit.

Flour Specifications. WFA announced July 13 that, in cooperation with the Army Quartermaster Corps, protein specification on purchases of hard winter wheat flour milled from new-crop wheat had been changed. Although an abundant Southwest wheat crop of high quality is being harvested, the protein content is running from 1½ to 2% lower than the 1942 and 1943 crops. On future purchases of flour for delivery to lend-lease and other claimants, specifications will permit delivery of flour containing, on the basis of 13.5% moisture, a minimum of 10.25% protein, maximum of 0.45% ash (figured on a moisture-free basis minimum of 11.85% protein and maximum of 0.52% ash), as compared with previous specifications for hard wheat straight flour, on the basis of 13.5% moisture, minimum protein content 11%, and maximum ash content 0.48%. The Quartermaster Corps has changed its specification on bakery flour, reducing minimum protein requirements from 12 to 11% and leaving maximum ash unchanged at 0.45%; and that on flour for foreign civilian relief uses, from a minimum of 11 to 10.25% protein with ash unchanged at 0.45%.

Bread. Attached to the June *Industrial Nutrition Service* bulletin, Office of Distribution, WFA, is a chart showing the percentage of N.R.C. recommended daily allowances, for a moderately active man, of thiamin, riboflavin, niacin, and iron, provided by 6 slices of white and whole wheat bread as follows: 100% whole wheat bread and white bread containing 2% dry skim milk—thiamin 30%, riboflavin 9%, niacin 36%, and iron 39%; enriched white bread containing 2% dry skim milk—thiamin 20%, riboflavin 8%, niacin 19%, and iron 3%; plain unenriched white bread—thiamin 5%, riboflavin 6%, niacin 5%, and iron 11%. Vitamin values for whole wheat and enriched white bread were obtained from N.R.C. Tables of Food Composition, revised March 1, 1944.

Fat Salvage. A report issued by OWI in June emphasized the need for increasing collections of fats and stated that despite the currently improved glycerine situation, there will be a critical need for housewives to turn in at least 230,000,000 lb. used kitchen fats. Collections last year were a little under 100,000,000 lb. The latter relieved a critical shortage of glycerine. The production of soap and other materials adequate for national military, industrial and civilian needs was made possible by the cooperation of the public. Burned or otherwise unusable household fats can be salvaged, according to this release.

Natural Storage Vault. A 75-year-old limestone mine near Atchison, Kan., has been leased by WFA, which plans to convert the mine's estimated 12,000,000 cu. ft. of space into a storage vault for government-owned lard, eggs, and other perishables. The project includes installation of refrigerator machinery to give the mine a temperature of between 30 and 32°F. Its normal temperature is about 50°F. Naturally insulated with 100 ft. of earth and stone, the huge, dry cave has railroad sidings and other attributes of a well-kept warehouse. It has capacity sufficient to accommodate 3000 to 3500 carloads of food, or the equivalent of 60,000 to 75,000 tons, depending on density. A building with the same floor space would cost approximately $15,000,000 to construct, according to WFA officials; it is estimated the Atchison project will cost about one tenth this amount. Lard will be stored first, then as the vast interior becomes chilled, fatbacks, salt and cured meats, dried fruits, dried eggs and similar commodities. The first shipments of food (10 to 12 carloads) to be stored in the mine were scheduled to be moved in August 31.

Household Equipment. As a result of a recent consumer goods survey of miscellaneous household items, based on responses by about 4500 "nationally representative families," production of merchandise will be increased as facilities become available, WPB's Office of Civilian Requirements stated June 14. Items shown to be in extremely short supply include wash boilers, carpet sweepers, teakettles, lawn mowers, alarm clocks, garbage cans, radio tubes, window screening, electric heating pads, can openers, extension cords, frying pans, and double boilers.

Analytical and Vitamin Technological Service to Food, Pharmaceutical, and Biochemical Industries and Institutions. Dr. G. C. Supplee, formerly associate director of research for the Borden Company, heads this newly formed service, known as the G. C. Supplee Research Corporation, Bainbridge, New York.

Fire Prevention. The week of October 8–14 has been designated Fire Prevention Week. The National Fire Protection Association, 60 Batterymarch Street, Boston 10, has prepared a booklet covering common causes of dwelling house, industrial, and farm fires, fire prevention, protection, etc., priced at 5 cents.

Rat Control. An electrocuting rat-trap on exhibition at the Massachusetts Hotel and Restaurant Exposition is said to have attracted widespread interest. Hundreds of rats are reported to have been caught in this tunnel-type trap in a single night. The supply of traps is limited and they are not for sale but can be rented on a daily basis or for a 30-day period through the Electric Eye Trap Company, 8 Newbury Street, Boston.

Safety. Among the booklets listed in a recent government release concerning the elimination of fatal farm accidents were the following, all of which may be obtained from the Office of Information, USDA, Washington 25: "Safety Check List for Women and Girls Doing Farm Work for the First Time" (AWI 31), "Fire Safeguards for the Farm" (FB 1643), "Safe Use and Storage of Gasoline and Kerosene on the Farm" (FB 1678), "Fireproofing Fabrics" (FB 1786), "Fireproofing Christmas Trees" (L 193), and "Watch Your Step" (MP 481). All of the booklets are illustrated and are described as being of general interest. *Industrial Medicine* for May carried an analysis of 1009 accident cases at an ordnance depot which shows that the accident rate for women is lower than for men, higher in young persons, and that the greatest number occur between 11 a.m. and 12 noon. It is suggested that diminishing of glycogen reserves, which hastens the onset of fatigue, is a factor in accident rates.

Food Poisoning. A wealth of valuable information will be found in the brochure prepared by, and available without charge from John Wyeth and Brother, Division Wyeth Inc., Philadelphia, entitled "Food Factors," which is No. 6 in the series "Etiology of Diarrhea." Food poisoning, its causes and incidence, is discussed in detail. The subjects of ptomaines, putrefaction, spoiling bacteria, and frequency and type of food poisoning outbreaks are presented, and the high incidence of food poisoning is suggested as due to the ubiquity of staphylococci, the great variety of foodstuffs in which the enterotoxin is known to have been elaborated, and the prevailing ignorance and apathy regarding the prevention of food contamination (air, milk, finger, droplet, or fly-borne). Lapses in community sanitation, it is stated, are more probable under wartime conditions. Protection of water supplies and adequate chlorination must be insisted upon, as well as precautions in connection with milk and milk products. The frequent use of uncooked foods in salads and consumption of raw sea food may be significant, and the danger of botulism in home canning is real. Refrigeration must be continuous, not only for quickly perishable foods and cream-filled pastries, but also for ham, bologna, and cheese. Special precautions must be observed in regard to food handlers.

Sources of toxins are listed, as well as symptoms of food poisoning, diagnostic details, treatment, and preventive measures. Similar information is given concerning infections—Salmonella, Streptococcus, and indefinite causative agents. Absorption by food of chemical poisons such as lead or sodium fluoride from insecticides and of cadmium from ice-cube trays is dealt with, also diagnosis and suggested treatment. Staphylococcus enterotoxin is the causative factor most prevalent in explosive outbreaks of gastro-intestinal symptoms of short incubation period and short duration and should be suspected even when Salmonella organisms (*e.g.*, *Bacillus enteritidis*, etc.) are isolated on cultures of the food. Adequate meat inspection, sanitation in slaughterhouses, and refrigeration during distribution effectively prevent Salmonella food poisoning. Prevention of poisoning through chemical, plant, and animal substances depends on care in the selection and preparation of food. The symptoms and treatment of various

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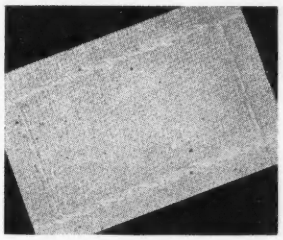

• They save on linens, reduce laundering time and labor, help relieve your hardworking laundry equipment . . . and add greater appetite appeal to diet trays. One size, the new Milapaco No. 87014-50, fits standard trays, permits us to make as many as possible from available paper stocks, to keep you well supplied.

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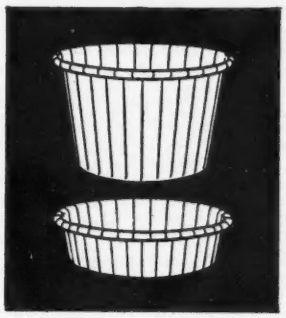

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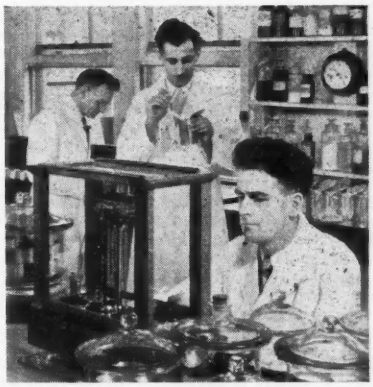

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3. The central laboratory also makes frequent bio-assays to verify the vitamin D potency of the milk.
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And this is only part of the care we take to make Irradiated Carnation Milk a product in whose uniform high quality the physician may repose the utmost confidence.

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food allergies are also discussed, and authoritative references included.

Lend-Lease. According to a report by the Foreign Economic Administration, supplies and services provided out of British stocks or by British facilities to the American forces taking part in the liberation of Europe include fresh vegetables and other British-produced foodstuffs that took care of 20% of our soldiers' rations. Australia is providing tremendously increased quantities of food to United States forces in the Pacific as reverse lend-lease, including beef, veal, lamb, mutton, pork, and canned meats, fresh milk, fresh eggs, and butter. Foodstuffs constituted more than one third of the reverse lend-lease aid provided to U. S. forces by New Zealand, which is making food available for our forces during the present year in greatly increased quantities.

In turn, we continue to supply, through lend-lease, about 10% of British needs. With the Soviet, our food shipments help offset the losses of domestic production due to overrunning of farm lands by the enemy. In the 5-month period ended May 31, we shipped 9.3% of our supply of meats (on a dressed weight basis), less than 1.5% of our butter, and less milk products (with the exception of cheese), dried eggs, and edible fats and oils than we did last year. The sharpest decrease was made in shipments of canned fish. We shipped more canned fruits and juices, dried fruits, and canned vegetables than last year. Large quantities of vegetable and field seeds were purchased for delivery to our allies, the production from which is expected to reduce lend-lease food shipments and make additional ship space available for transport of munitions and other matériel to the war areas.

The "Sixteenth Report to Congress on Lend-Lease Operations" for the period ending June 30, 1944, has been published by the U. S. Printing Office, Washington.

Exploitation of Mothers' Organizations. An article in the July *Woman's Home Companion*, "The Mother Racket," describes how several wartime "mothers" organizations in this country are being exploited by un-American fascist groups. The National Council of Women of the United States has called the attention of the A. D. A. and other national organizations to the activities of the leaders of the above-mentioned groups and asks cooperation in "combating native fascism on the home front."

News of Pan-American Countries. Two U.S. dairy specialists have just completed a 6-month fact-finding survey in 7 American republics—Venezuela, Colombia, Costa Rica, Panama, Honduras, El Salvador and Nicaragua—designed to find ways and means of increasing dairy production for wartime needs.

Haiti hopes to expand further its production of food crops by wide use of family-farm mechanical equipment, to be purchased probably through organization of farmer cooperatives, according to Andre Liautaud, Haitian ambassador.

According to figures for the first 3 months of 1944 published by the U. S. Department of Commerce, the other American republics accumulated an aggregate net balance of approximately $166,000,000 from sale of commodities and goods to the United States compared with $79,000,000 in the first quarter of 1943. With improvement of shipping conditions, the United States has increased its imports of sugar, coffee, and other products which normally comprise the great bulk of our imports from Latin America. At the same time there has been a record-breaking accumulation of gold and foreign exchange in the other American republics which, according to banking circles, now hold more than $3,000,000,000 in gold and foreign exchange, largely accumulated during the war years. Increased imports of sugar and industrial alcohol from Caribbean sources were reflected in Cuba's net balance, and of coffee in that of Brazil and Colombia. Also showing larger merchandise balances were Guatemala, El Salvador, Uruguay, Argentina, and Bolivia. Striking reversals of normal trade trends during the war years were emphasized by heavy movement of gold to Mexico.

Two more Latin American countries, Venezuela and Peru, have extended current agreements calling for cooperation of the United States to increase their wartime food production, it has been announced by the Institute of Inter-American Affairs, an agency of the Office of the Coordinator of Inter-American Affairs. The Venezuelan agreement provides for matching sums of $500,000 by the institute and the Venezuelan government. The institute's Food Supply Division is to extend projects covering storage, distribution, and refrigeration during the coming year. The new Peruvian agreement calls for a contribution of $300,000 by the Peruvian government and half that sum by the institute.

Honduras, one of the leading Western Hemisphere producers of bananas, has created a National Food and Agricultural Commission as part of a long-range program to improve food production for home consumption. According to reports received by the Institute of Inter-American Affairs, the new food commission eventually will take over agricultural demonstration and experimental work started by a United States food supply mission in cooperation with the Honduran government. In the Comayagua Valley, near the town of Comayagua, ancient capital of Honduras, 620 acres of new land have been brought under cultivation, an additional 1000 acres have been cleared, and 9 miles of irrigation channels constructed to aid in the revival of a once-flourishing farming area. Some 40 out of a proposed total of 60 families of colonists were established in the first year of operations. A herd of nearly 500 cattle has been acquired and the proceeds from the sale of meat, milk, vegetables, corn, and other produce in nearby markets are being applied to the development of the enterprise. With the assistance of United States agricultural specialists, work is being pushed to complete the Comayagua irrigation system, to clear additional pasture land, and to build barns, silos, and corrals. At Toncontin a water reservoir has been established, and irrigation techniques and grain storage methods are being demonstrated. At Danli a 200-acre tract of land has been cleared for cultivation and pasture, a warehouse has been built, and engineers have helped construct a road for the movement of agricultural produce to market. The agricultural mission has imported and distributed 50,000 lb. high-quality rice seed. The newly-created commission has sections which will be concerned with transportation, warehousing, farm experimentation, agricultural engineering, nutrition and public health, statistics and information, and land distribution.

Dr. Edward C. Pinheiro, Brazil, who has spent a year studying agricultural methods in the United States as a guest of the Institute of Inter-American Affairs, was formerly mayor of the town of Monte Alegre, State of Para, where he instituted many progressive measures, including improvement in the nutrition of the people in this town in the heart of the Amazon's rubber, lumber, and Brazil nut industries. To supplement the meager diet, largely of dried fish, which had caused dietary deficiency, Dr. Pinheiro instituted a school lunch program and encouraged the students to start victory gardens, as a consequence of which most of the families grew vegetables for the first time. Dr. Pinheiro has studied home demonstration methods under the State Extension Service in Arkansas and is much interested in the national nutrition program in this country. He hopes that a similar movement may be started soon in the Amazon region, according to an interview reported by the Coordinator of Inter-American Affairs.

To utilize the milk production in the Bogota area and other regions in Colombia, a modern plant for the preparation of condensed and powdered milk has been established, the equipment for which was obtained from the United States.

A uniform code "for the protection of the public against harmful drugs and adulterated foods" in all the American republics was one of the resolutions approved by the Fifth Pan American Conference of National Health Directors, held in Washington recently. The resolution will be submitted for action to the Twelfth Pan American Health Conference which will be held in Caracas, Venezuela, next year. Delegates to the conference, representing all the republics of this hemisphere, made a detailed study of the problems affecting foods and drugs in America and were unanimous in declaring that they were a serious potential menace to the health of the American peoples. The matter originally was submitted for the consideration of delegates by Dr. Thomas Parran, Surgeon General of the United States Public Health Service.

Grace Godfrey. The New York *Times* for August 26 reported the death of Miss Godfrey, aged 51, due to a heart attack, at the home management house, Drexel Institute of Technology, Philadelphia, on August 25. She was dean of the School of Home Economics. A native of Wisconsin, Dean Godfrey held the master's degree from Teachers College, Columbia University, and joined the staff of the Institute in 1919 as professor of home economics. She was active in both professional organizations of which she was a member—the A. D. A. and A. H. E. A., and was chairman of a subcommittee of the Professional Education Section, A. D. A., at the time of her death.

Eleanora Sense Receives Appointment. Miss Sense, in charge of press relations for the A. D. A. at the annual meetings in New York and St. Louis, 1940 and 1941, and formerly foods editor of *The American Home*, has been appointed co-editor of *Forecast*. Miss Sense is author of the widely read *America's Nutrition Primer* and illustrator of Herman Smith's book, *Stina—The Story of a Cook*.

Marie L. Casteen Assumes New Position. Beginning October 1, Miss Casteen joins the dietary staff at Florida State College for Women, Tallahassee. In addition to her duties as dietitian, Miss Casteen will be co-director with Anna M. Tracy of the administrative student dietitian training course.

Fern W. Gleiser Given Professorship. Miss Gleiser, formerly of Iowa State College, is the first woman to be given full rank as a professor on the staff of the University of Chicago's School of Business, according to an announcement by the acting dean. A recognized authority in the field of food management, Miss Gleiser as professor of institution management will assist in developing the restaurant administration program now being conducted by the School of Business with the support of a $100,000 gift from the National Restaurant Association. For the past 13 years Miss Gleiser has headed the Institution Management Department, Iowa State College, and prior to this she was associated with Drexel Institute, Columbia University, and Oregon State College. Prerequisites for the course under Miss Gleiser include a "liberal

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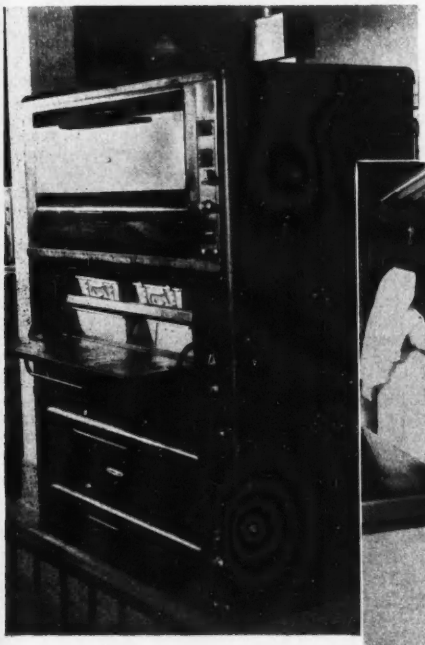

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education," and students who qualify will have 2 years of specialized work in general business subjects and 1 year in foods, nutrition, and problems of food purchasing and preparation.

Food Service Directors' Conference, Hotel Statler, Cleveland, November 17–18, will include conducted trips to school lunchrooms of Greater Cleveland, industrial and commercial cafeterias, hospital kitchens, a college dormitory kitchen, and the Cleveland Health Museum. Panel discussions will cover the care and availability of equipment and new developments for postwar use. Other subjects include child care and nursery schools; the effects of nutrition on world history; problems of personnel, human relations, and sanitation; nutrition education; standardization of menus and recipes; and applying the science of nutrition to quantity cooking. Group meetings of interest to college residence hall and private school food service directors, teacher-managers, rural school food service managers, and industrial cafeteria managers will be conducted, and a demonstration on salads and vegetables will be presented by Statler Hotel dietitians.

California Dietetic Association. The southern sections of the home economics and dietetic associations were co-sponsors with the State Food and Nutrition Committee, California State War Council, of a Conference on Food, Nutrition, and Dietetics, August 16–17, in Los Angeles. By their combined efforts, the associations were able to secure excellent speakers on community food and nutrition activities. The program included administrative problems, nutrition reports, public health problems, and educational activities.

Officers for the coming year, San Diego Section, are Helen B. Anderson, chairman, Christmas Idle, secretary-treasurer; Los Angeles Section, Clancy Morrison, chairman, Dorothy Price, vice-chairman, Margaret Wengert, secretary-treasurer. The election of officers for Northern California has been delayed, as the San Francisco and East Bay Sections have again united as the Bay Section.

Miss Morrison, who was stationed in Africa with an aircraft company for two years, is now dietitian at the Student Union Building, Occidental College, Los Angeles. Dorothy Ruggles, formerly at Orthopedic Hospital, Los Angeles, is now chief dietitian, Norwegian American Hospital, Chicago.

Colorado Dietetic Association. The spring convention program included: "Reduction of Food Waste in Army Messes," Capt. A. W. Eckert, Fitzsimons G. H.; "Our Daily Bread," Dr. Essie White Cohn, Denver University; and "Meeting Everyday Problems," Dr. Bradford Murphey, Denver psychiatrist.

State executives taking office September 1 are Lt. Maryethel Meyer, Fitzsimons G. H., president; Aline Haakinson, Colorado General Hospital, president-elect; Mary Ellen Johnson, St. Luke's Hospital, secretary; Mary June Carter, Children's Hospital, treasurer; and Capt. Mildred Albritton, Fitzsimons G. H., member, House of Delegates, A. D. A. Retiring officers are Mabelle V. Williams, president; Kathryn Boyd, secretary; and Ada Beth Bragg, treasurer.

Louise Mohr, head dietitian at Colorado General Hospital, was married May 17 to Lt. Richard Dennler.

Doris Odle, who has succeeded Miss Mohr at Colorado General Hospital, was formerly at Presbyterian Hospital, Denver, and during the past year received the master's degree from Kansas State College.

Rosamond Thompson, Ft. Worth, is now teaching dietitian at Denver General Hospital, succeeding Frances Voris. Besse Lay succeeds Margaret Hall as therapeutic dietitian.

Lotte Goldschmidt and Waunetta Westcott, Colorado General Hospital students, have entered Ft. Leonard Wood Station Hospital for their Army internships. Second Lts. Alice Mayhew and Dorothy Barglof, graduates of the training course at this hospital, are taking basic training at Camp Carson, Colorado Springs.

New officers of the Denver Dietetic Association are: Lieutenant Meyer, president; Dorothy Eagen, Children's Hospital, secretary-treasurer; and Leah Bressler, Denver General Hospital, program chairman.

Students who entered training at Colorado General Hospital July 1 are: Virginia Miller, Milwaukee-Downer College; Elizabeth Wolfe, University of Illinois; Doris Windsor, Oregon State College; Margaret Carroll, University of Wyoming; Suzanne Hayward, Iowa State College; Corinne Eckhart, University of Iowa; Margaret Molenaar, University of North Dakota; and Virginia Swann, Kansas State College.

Ruth Palmes, Ft. Collins, has succeeded Mabelle V. Williams as therapeutic dietitian, Colorado General Hospital. Mrs. Pauline Dill Swanson, formerly head dietitian, Colorado General Hospital, is living in Greeley with her parents and her two sons while Dr. Swanson is serving overseas. Dr. P. Mabel Nelson, Iowa State College, was honor guest at a tea given by Mrs. Harold Henson, former Colorado General Hospital dietitian. Guests were Iowa State College alumnae.

New Jersey Dietetic Association. A picnic meeting was held by the association in June, at Muhlenburg Hospital, Plainfield, for new and prospective members.

Alberta Dent, the association's first president, was married June 28 to Mr. Horace Ellsworth Shackelton. Mr. and Mrs. Shackelton are living at 914 E. State Street, Ithaca, N. Y.

List of Exhibitors, 27th Annual Meeting and Exhibit, American Dietetic Association, October 25–27, 1944

American Can Company, New York
Armour & Company, Chicago
Battle Creek Food Company, Battle Creek, Michigan
Best Foods, Inc., New York
G. S. Blodgett Company, Inc., Burlington, Vermont
Burgess Publishing Company, Minneapolis
Carnation Company, Oconomowoc, Wisconsin
Central Plastics Company, Waukegan, Illinois
Chicago Dietetic Supply House, Inc., Chicago
Citrus Concentrates, Inc., Dunedin, Florida
Cream of Wheat Corporation, Minneapolis
Cube Steak Machine Company, Boston
F. A. Davis Company, Philadelphia
Deepfreeze Motor Products Corporation, North Chicago, Illinois
Dennis Water Cress Company, Martinsburg, West Virginia
Dietene Company, Minneapolis
Doughnut Corporation of America, New York
Edison General Electric Appliance Company, Inc., Chicago
Foley Manufacturing Company, Minneapolis
General Foods Sales Company, Inc., New York
General Mills Inc., Minneapolis
Gerber Products Company, Fremont, Michigan
Grocery Store Sales Products Company, New York
Groen Manufacturing Company, Chicago
Chr. Hansen's Laboratory, Inc., Little Falls, New York
H. J. Heinz Company, Pittsburgh
Hilker & Bletsch Company, Chicago
Institutions Magazine, Chicago
Irradiated Evaporated Milk Institute, Chicago
Journal of Home Economics, Washington, D. C.
Kellogg Company, Battle Creek, Michigan
Charles B. Knox Gelatine Company, Johnstown, New York
Kraft Cheese Company, Chicago
Lederle Laboratories, Inc., New York
Libby, McNeill & Libby, Chicago
Lily-Tulip Cup Corporation, New York
J. B. Lippincott Company, Philadelphia
Macmillan Company, New York
Maltex Company, Burlington, Vermont
C. V. Mosby Company, St. Louis
National Association of Margarine Manufacturers, Washington, D. C.
National Dairy Council, Chicago
National Dairy Products Corporation, New York
National Live Stock and Meat Board, Chicago
Paper Cup and Container Institute, New York
Pet Milk Sales Corporation, St. Louis
Pfaelzer Brothers, Chicago
J. C. Pitman & Sons, Inc., Lynn, Massachusetts
Planned Foods, Inc., New York
Poultry and Egg National Board, Chicago
Prometheus Electric Corporation, New York
Quaker Oats Company, Chicago
Ralston Purina Company, St. Louis
Robertshaw Thermostat Company, Youngwood, Pennsylvania
Royce L. Parker, Inc., Bellwood, Illinois
W. B. Saunders Company, Philadelphia
Savory Equipment, Division of Talon, Inc., Newark, New Jersey
Ad. Seidel & Son, Chicago
John Sexton & Company, Chicago
Sparkler Manufacturing Company, Mundelein, Illinois
A. E. Staley Manufacturing Company, Decatur, Illinois
Standard Brands Inc., New York
Virginia Dare Extract Company, Brooklyn
H. M. Walker Company, Chicago
Wesson Oil and Snowdrift Sales Company, New York
Westinghouse Electric & Manufacturing Company, Mansfield, Ohio
Wilson & Company, Chicago
Wisconsin Alumni Research Foundation, Madison, Wisconsin
Wyandotte Chemicals Corporation, Wyandotte, Michigan
Wyeth Inc., Philadelphia